MEDICAL REPOSITORY,

FOR

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REMARKS *on the* YELLOW FEVER *of* NEW-YORK, *in* 1741, *and* 1742; *by the Hon.* CADWALLADER COLDEN. *Written in* 1743. *Communicated to the Editors by his Grandson*, C. D. COLDEN, *Esq.*

NO man who has any share of humanity or regard for the welfare of society, wherein he lives, can, with indifference, observe or hear of the mortality which has prevailed among the inhabitants of the city of New-York these two last summers, but will be desirous to give what assistance to his neighbour he can, by any information which has come to his knowledge, or by any other means in his power.*

When any disease yearly returns in a particular place, while the country round remains free from it, people naturally conclude that it is owing to something peculiar to that place; and in order to discover whether any thing peculiar to the soil or air of New-York, may reasonably be supposed to be the cause of these epidemical fevers in New-York, I shall make an abstract from a book, which I have by me, on the subject of malignant and pestilential fevers, occasioned by a faulty air or soil in particular places, written by Lancisi, Pope Clement the 11th's Physician; a man

* Extract of a letter from James Alexander, Esq. to the author, dated 22d January 1743—4. In this Mr. Alexander says, "Parker, (the publisher of the Newspaper) has printed the English part of your paper very well; as to the Latin he has indeed blundered, but that is not of so much moment. The paper, I believe and hope, has had the effect desired, to wit, to convince a majority of our magistrates of the necessity of removing skinners, tanners, &c. to fresh water; and of either clearing or filling up the slips before summer; and measures are taking for cleaning those things and putting those former laws, as to the keeping clean the streets, in better execution. All whom I have talked to on this head, think themselves and the city under great obligations to you for that paper, than which nothing could be more necessary or serviceable."

of great character, both as to his skill in physic and his probity; and who treats of this subject more fully and clearly than any author I have seen. I expect that this may be the more acceptable, because it is a rare book, and perhaps not another copy of it in this part of the world besides that which I have.*

These fevers recur yearly in the summer, from the time the weather begins to grow hot, till the end of September. They commonly cease during the winter cold. They are milder at their first appearance, but grow more and more malignant as the season advances. They are, at first, commonly of the intermittent kind; but more frequently, especially as the hot weather advances, the paroxysms only remit, and at the same time many have continued fevers with frequent exacerbations rather than remissions. The sick contract a dead dusky yellow complexion, and before they die, purple eruptions frequently happen on the skin. The intestines are almost always affected, and have been found generally sphacelated in the bodies which have been opened.—The brain often is affected, and all the worst symptoms of fever generally attend these before death, though sometimes the fever appears so mild that the sick is not thought in danger till apoplectic or comatous symptoms appear which declare him past recovery.†

This is the general character of these fevers, collected from several parts of this book.

Lancisi at first gives a more general account of these fevers from the ancient Roman historians.

And first, he observes, that the place on which Rome was built, was, in its natural state, unhealthy, and for that reason avoided by the first inhabitants of the country. That this unhealthiness was occasioned by swamps and stagnating waters between the hills on which the city was afterwards built, as appears from Ovid. 6. Fastorum.

* I think there is the more reason for admonishing the inhabitants of New-York on this, because, by their being originally from the northern climates, where the ill effects of stagnating waters are not so remarkable as in the warm climates, they may be more negligent in this point, and less apprehensive of the danger that arises from thence.

† They seldom have any regular crisis, but the sick, when they recover, continue long weak and infirm, and they are often succeeded by chronical distempers.

Hoc, ubi nunc fora ſunt, udæ tenuere paludes;
Amne redundatis foſſa madebat aquis.
Curtius ille lacus, ſiccas qui ſuſtinet aras,
Nunc ſolida eſt tellus, ſed lacus ante fuit.
Quà Velabra ſolent in Circum ducere pompas,
Nil præter ſolices caſſaque canna fuit.

As the first inhabitants of Rome suffered much from these stagnating waters, their kings bestowed a great part of their care in draining these low grounds. And it is taken notice of by historians as a memorable act of Tarquinius Priscus, that he drained Velabrum by a very notable canal.* Pliny takes notice, as of one of the greatest works of M. Agrippa, that he cut through mountains, in order to bring seven rivers into the city to wash and cleanse the canals and shores of all filth; and that he had in a manner undermined the whole city in order to keep it clean and healthy.

The Roman historians observe, that so often as these drains were neglected and stopped, so that the water and filth stagnated, the city became unhealthy, and the inhabitants were wasted by malignant and pestilential fevers.—When this happened, the Romans spared no cost to cleanse and keep the city clean. C. Aquilius writes, that the common shores being, by neglect, stopped, the Censors bestowed a thousand talents in opening and cleansing of them.

In order to keep the city always clean, the Romans chose Magistrates, called Ædiles and Curatores for that purpose, who had under them several companies of men continually employed in that work. They wore a particular badge to distinguish them; and for their encouragement enjoyed special privileges, and were freed from all other public service.

The Romans likewise, under severe penalties, forbade diverting of the money destined for keeping clean the public shores and drains, to any other use, under pretence of any necessity, however urgent; and by special laws laid heavy penalties on those, who, by their negligence, suffered water or filth any where to stagnate and remain.

Such was the care of this wise and prudent people; and certain it is, that without taking such care of the health of the inhabitants, they never could have risen to that grandeur they did. And the effect of this care is very manifest,

* There is yet a veſtige of the great ſewer made by Tarquinius Priſcus in Rome, it is called the Cloaca Maxima. It empties into the Tiber, near the arch of Janus, and almoſt under the temple of Veſta.

when so great a city, crowded with such vast numbers of people, during all the time of its grandeur, remained exceedingly healthy, though, as has been observed, by the nature of its soil it was most likely to be otherwise.

But after all these great works for keeping the city clean were destroyed by the incursions of the Goths and Vandals, Rome became exceedingly unhealthy; as appears by the following verses of Damiani, wrote in the 11th Century.

> " Roma vorax hominum domat ardua colla virorum;
> Roma ferax febrium necis eſt uberrima frugum;
> Romanæ febres ſtabili ſunt jure fideles,
> Quem ſemel invadunt, vix a vivente recedunt."

And Pope Innocent the 3d, writes in the 12th and 13th century, that few in Rome reached 40 years of age, and scarce any 60.

Lancisi observes, that many of the places where the ancient Roman senators had their country seats, are now infamous by their unhealthiness, which could not have been so in their time, considering their great delicacy in their choice of every thing for their pleasure; but that this unhealthiness of these places has happened by the negligence of the present owners, in suffering waters to stagnate there.

Aqueleja, once a flourishing city, the metropolis of the country, and the seat of a Patriarch, is now reduced to a pitiful country town, by the negligence of the inhabitants, without any calamity of war or misfortune from abroad, but merely by their suffering it to grow unhealthy by stagnating water in moist slimy grounds.

Dr. Rosinus Lentilius, the Duke of Wirtemburgh's chief physician, observes, that there having been formerly a large swamp in the neighbourhood of Stutgard, the capital of the country, that city was yearly subject to malignant fevers; but, that swamp being drained and converted into meadow grounds, the city afterwards became healthy.

So likewise Rome, in the 16th century, was, in a great measure, restored to its former state of health by the care of the Popes reigning at that time; who caused all the stagnating waters to be drained off, and took care that the city was every where kept clean. But one particular place, where the inhabitants were obliged to carry and throw the dead carcases of beasts and other filth into the river, was frequently subject to the return of these annual malignant

fevers, by the inhabitants not taking sufficient care to throw their filth far enough into the stream; whereby such nastiness remained upon the shore, or kept floating in the eddies, and occasioned an offensive smell there.

The river Merano, in 1601, having, by a flood, overflowed its banks, filled the adjacent lower parts of the city of Rome with stagnating waters, which, remaining there, corrupted and sent forth stinking vapours, whereby the adjoining houses became infected, and became unpeopled by the death and flight of the inhabitants. Pope Clement the 8th, ordered a large drain to be cut, by which that part of the town was kept dry, and it continued afterwards always as healthy as the other parts of the city.

In 1695, that part of the city of Rome called the Leonine, became offensive to the inhabitants by a stinking smell. The inhabitants of that quarter were seized with epidemical fevers, as likewise the adjoining parts to the northward of it, while the parts immediately to the southward, and the more distant parts, remained free. This was found to be owing to a neglect in scouring the ditch of the castle into which that part of the town was drained. By cleaning out the ditch and opening the drains that part recovered its usual healthiness.*

The Tiber having overflowed its banks the 23d of December 1702, Lancisi, chief physician to the reigning Pope Clement the 11th, signified to the Pope the danger that the health of the inhabitants would be in from the stagnating waters, if they were not removed before the summer's approach. He set forth that turbid water being carried into the lower parts of the town, fills the cellars of the houses and the wells, the waters of which chiefly serve the common people for drink. These waters, as they are strained off through the earth, leave behind them all the filth with which they were impregnated from the dead bodies of insects and the carcases of dead beasts, &c. That this slime, during the winter, remains fixed and sends forth no vapours, but after the summer heats begin it ferments and

* Our author likewise takes notice, that the owners of a particular part of the town where there were ruins of some old great building, having dug deep into those ruins for materials for building, and suffering the waters to stagnate in the pits, it began to stink, and the inhabitants of the neighbourhood were seized with malignant fevers, which continued until these pits were filled up, after which they entirely ceased.

sends forth noxious vapours, exceedingly prejudicial to all the vital parts of the human body, and productive of fevers of the worst sort. He adds, that noxious vapours are not only thus produced at Rome, but in every other warm climate, except where they have frequent gusts of northerly winds during the summer, which disperse these vapours, that otherwise would hover and remain in the circumambient air where they are generated. He put the Pope in mind, that not long before, a great destruction had happened among the inhabitants by camp or pestilential fevers, and that by the neglect of the governors of the city on an occasion like this. The prudent Pope, pursuant to his physician's advice, issued an edict for draining the waters and cleaning the city from all the slime and filth, and for keeping it clean and dry for the future; and care being taken to have this edict effectually put in execution, the city had remained to the time that Lancisi wrote his book, for the space of 15 years, entirely free from all fevers of that kind.

Pesaro is situated at the mouth of a river, near the Adriatic sea, on a plain near great quantities of marsh and oozy ground, and was infamous, in ancient times, for the unhealthiness of the place, as appears from the following distich of Catullus:

> Præterquam iſte tuus moribunda a ſede Piſauri
> Hoſpes, inaurata pallidior ſtatua.

It continued so for many ages, so that scarce any of its inhabitants ever reached 50 years of age, until it had the good fortune to fall under the government of a wise prince, who, in order to relieve the inhabitants from the mischievous effects of the situation of this place, opened the channel of the river, cut its course more straight, made large canals for drawing off the water from the low places, and where they could not be drained, filled them up. This was done in the years 1515, 17, and 18, and from that time the city became healthy, populous, and opulent, until the citizens, forgetting from what causes they had enjoyed such blessings, suffered the channel of the river to fill up, and neglected their drains. This occasioned, in the years 1708 & 9, grievous malignant fevers.

An engineer, by Lancisi's advice, was sent to Pesaro to contrive the proper methods for draining the country, which being effected, the city was restored to its former state of health.

In 1705, malignant pestilential fevers became yearly epidemical in Urbevetano, a town formerly very healthy. This, Lancisi says, was occasioned by the inhabitants digging many pits on their low lands, near the town, for rotting of hemp and flax, at the same time neglecting their drains, and suffering their streets to become offensive to the smell, by the filth that remained upon them.

By Lancisi's advice, the Pope ordered these pits, near the town, to be filled up and others made at a greater distance from the town. That the drains, cisterns and cellars of the town, and the pits for rotting of hemp and flax, should be yearly cleaned in the months of January and February. That the slaughter-houses be removed out of the city and set in such places where the filth should be constantly washed away by every rain.

These orders being effectually put in execution, the fevers did not return the following summer, and the town kept free of them to the time Lancisi wrote in 1716.

The citizens erected an inscription on one of their gates, in commemoration of their deliverance from these pestilential fevers, and of the means by which it was procured.

On the first of May 1707, the hilly grounds to the southward of the town of Bagnarea, after continued great rains, began to move and fall into the river, which runs near that town, in such manner that whole vineyards were moved from their place, and some houses without falling; in one of them a woman was delivered of a child while the house was on its march. The channel of the river was choked and filled up. Many cracks, gaps, and holes were left in several parts of the ground, in which the waters stagnated, and they being impregnated from sulphureous minerals, with which the earth there abounded, they became exceedingly offensive to the smell, in the summer heats. The colour of the inhabitants became of a dead, swarthy yellow, and grievous pestilential fevers seized them. These were confined to the southern and lower parts of the town, while the other parts which stood high, and at a distance from the stagnating water, out of the reach of the vapour which arose from them, remained healthy as usual.

The channel of the river being cleared, drains made for carrying off the waters, the places where it stagnated cleaned, and the cavities which could not be drained, filled up, the inhabitants were the next summer freed from these

destructive fevers, and continued free from them till the time Lancisi wrote, and he doubts not they will continue so as long as they shall continue to keep the town and adjacent parts clean and free from stagnating waters.

In the public thanksgiving, ordered for this deliverance, the bishop declared the obligations they were under to Lancisi, by whose advice they had been delivered from such pernicious diseases.

Our author, in like manner, observes, that Ferentino, by his advice, was delivered from such like epidemical distempers, in which I find nothing particular to be taken notice of but that the necessary works for draining the stagnating waters and keeping the town clean, were obstructed for some time by the avaricious penury of some of the inhabitants, and the private interest of others, which in such cases, must sometimes unavoidably suffer.

Lancisi was so much confirmed, by long experience, in his opinion that these kinds of fevers are always occasioned by filth and stagnating waters, that, whenever he heard of such fevers breaking out in any place, he did not hesitate to affirm, that they were occasioned by filthy offensive water or slime stagnating in those parts, and that before he had information of such cause, and frequently before the inhabitants themselves had taken notice of the cause. This, his conjecture was always confirmed upon a proper inquiry.

I shall only add, that Ramazzini likewise observes, that in the year 1690, the inhabitants of the lower wet parts of Modena were seized with epidemical fevers, while those of the high parts of the city remained healthy. All the writers in physic confirm the truth of these observations, whenever they have occasion to write on this subject. And indeed stagnating waters have been infamous, from all antiquity, for their noxious quality, and for that reason were by the ancient poets described under the representation of the Hydra, throwing out a poisonous deadly breath.

Clear deep ponds are not found unhealthy, though they have little or no motion, nor are salt water ponds. But the more saturated they are with mud and slime, especially with the dead carcases of insects or of beasts, or other nastiness, or of sulphureous or arsenical minerals, the more mischievious they are ; and the greater the variety of the mixture, they are thought to be thereby the more noxious.

Salt water, when it is mixed with fresh water, thus satu-

rated, is more mischievous than fresh. Hence the marshes where the salt and fresh waters meet were more unhealthy than either the salt marshes, or fresh water meadows.

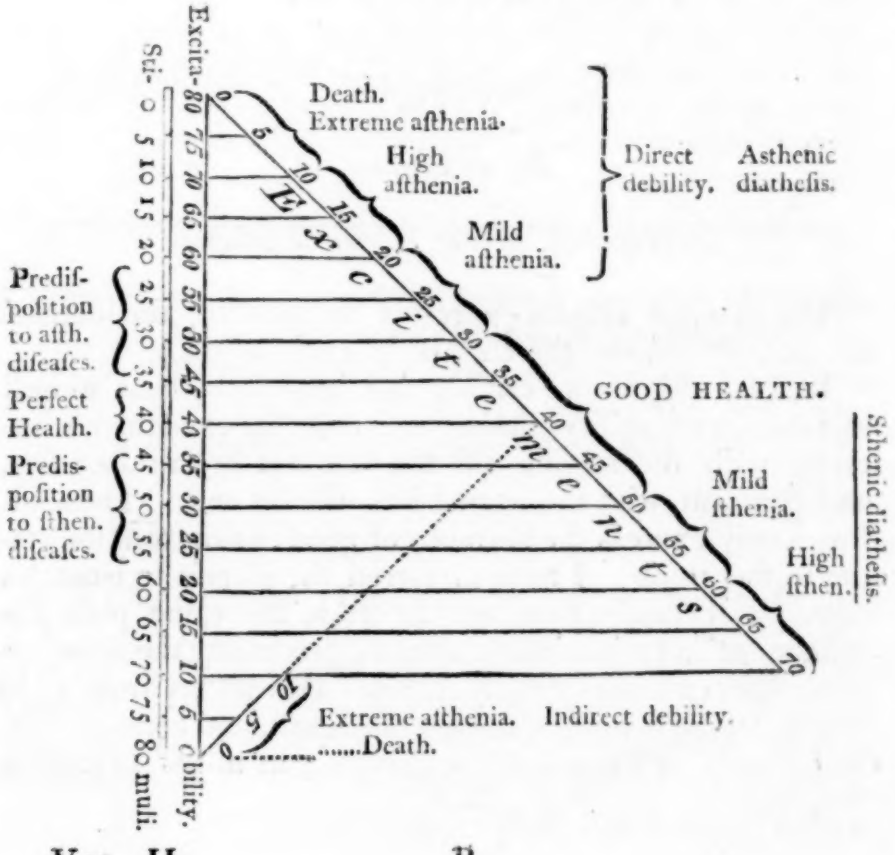
Places situated on the north side of these slimy wet places were more unhealthy than those on the south side of them; because the warm moist southerly winds increase the fermentation, and, consequently, the quantity of noxious vapours arising from it, and carries them to the northward.

(To be continued.)

ILLUSTRATIONS *of the* BRUNONIAN DOCTRINE, *as it respects Excitability, Stimulus and Excitement. By* DON ROXAS, *late Professor of Subterranean Geometry in the School of Mines, at Mexico.*

SCHEME I.

By a Triangle.



Explanation of the Triangular Scheme.

This triangle expresses the different excitements in whatsoever period of life. When the stimuli are proportioned to partial excitability, the effect is good health. When the stimuli are less than we want, the partial excitability increases and excitements diminish, till 0, or death. When the stimuli are greater than we want, the excitability diminishes, and the excitements increase only till 70°, and from this point descend suddenly till 10°, producing extreme asthenia.

All in this triangle is relative and applicable to all ages: the same proportionably augmented or deficient excitements we can consider in Astyanax, in Pyrrhus, and in Nestor. This triangle, I believe, is better than the table of Mr. Lynch. In his table we cannot see the increase or diminution of excitability and excitement: and in his table, he says, that the excitements in indirect debility are 70, 75, and 80, which is entirely contrary to the doctrines of Brown, and contradictory to the laws of living nature.

Scheme II.

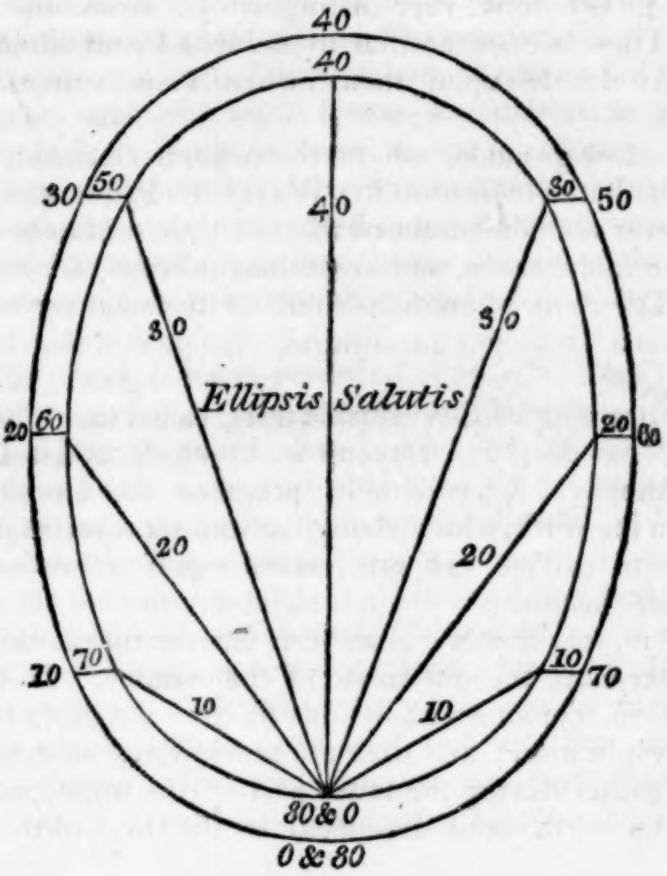
By an Ellipsis.

Explanation of the Elliptical Scheme.

The external ellipsis expresses the stimuli; the internal the excitability, and the chords the excitements.

In these ellipses we can see that in proportion as stimuli increases, excitability diminishes, and that excitements increase with the stimuli till the medium or middle point, and diminish with the excitability till the end. These ellipses only express the harmony of good health from the cradle to the tomb I have preferred the ellipsis to isosceles triangles, because here we can see in the same place the maximum and minimum of stimuli, producing the same effect; the extremes exactly meet. Deviations from good health, through want or excess of stimuli, and consequently by sickness, I express by a triangle; as in the preceding diagram.

SCHEME.



CASES *of the* FEVER *which prevails near the* DROWNED LANDS, *in* ORANGE COUNTY, *state of New-York, in a letter from* PETER H. COLE, *House Physician to the New-York Hospital, to Dr.* MITCHILL, *one of the Physicians of that Institution, dated January* 1st, 1810.

SIR,

AS you requested, I transmit to you the cases of the patients labouring under fever from the Drowned Lands, near the Wallkill, which were received in the New-York Hospital, during the late term of your attendance. There is a peculiarity in them that, as you early observed, renders them worthy of a more distinguished place in medical history. The persons suffering under this disease, have a

yellowish or sallow complexion and eyes, and a certain haggard or ghastly look, very distinguishable from other maladies. These are so familiar to me, that I can, almost to a certainty, decide upon them when I meet them in the streets.

These low grounds, where the patients sickened, are in the immediate vicinity of the Wallkill From their situation, lower than the outlet of the river, they have been subjected to inundations, and are almost always wet and marshy. Their extent amounts to many thousand acres. The bottom is a fertile mould, admirably adapted to the raising of hemp.

The draining of this valuable tract, called the "Drowned Lands," has been undertaken by a company under Legislative authority. Considerable progress has already been made in the work, which, though arduous, promises great advantage to private property, and a signal improvement of the public health.

The region, however, has been famous for its unhealthiness ever since the settlement of the country. During the hot season, copious exhalations fill the atmosphere, from solar evaporation; and then are precipitated in dense fogs, which gather during the latter part of the night, and overhang the earth until dissipated by the heat of the morning.

There is something very deleterious imparted to the atmosphere from this swampy surface, and it acts noxiously upon the human body during the time of sleep between midnight and sunrise, and during the hours of waking and fasting, until they get their first meal, or the cloudiness disappears. Indeed, few constitutions can long endure its malignity. Some of the most sturdy labourers are overpowered by it in a few days; and he has stouter nerves than commonly fall to the lot of man, to withstand it many weeks. The temptation of liberal pay, draws to this unwholesome region, a crowd of hardy labourers. As they sicken and become disabled, a new set is ready, under the same inducement, to take their places. These stand as long as their strength lasts, and in their turn, are succeeded by fresh hands. And by these means, the important and desirable work of draining the Drowned Lands, is carried on.

It is proper to observe, that in addition to the high wages, are included board and lodging, with a daily allowance of

about a pint of whiskey. This appears to have been entirely consumed, and many of them have been known to buy an additional quantity from the retailers.

The disease which I have described cannot fail to afford instructing analogies with fevers which arise in the seaports. Indeed, the conclusion seems irresistable, that febrile diseases, whether arising in the interior situations, or on the sea coast, are of kindred natures; and run into each other by shades and gradations, better known to the experienced observer in practice, than capable of being reduced to the rules of nosology.

In the cases I have recorded, the facts were derived from the mouths of the persons respectively, while they were under your prescription. The general debility, the anomalous form of fever varying from the continued to the quotidian and tertian, the indications of disordered liver and spleen, the yellow hue of the skin and eyes, the occasional dropsical effusions, together with the obstinacy and violence with which the disease harassed those whom it invaded, are matters of prominent regard in its history. If the account I give you shall afford any thing new in medical research, or shall have delineated in a way that is in the smallest degree instructive, the endemic distemper of that noted district, I shall think the pains I have taken are well rewarded.

CASE I.

William Holmes, Englishman, aged 37—has been four years in the United States, chiefly in Boston, as a hardware dealer. Went to the outlet to work in June, and continued to labour for six weeks, at twelve dollars a month. He laboured with a crowbar and spade, and in carrying stones. Was then seized with anorexia, nausea, headach, and pains in the back and limbs. After a week's lingering, with loss of appetite, and increasing debility, he came to New-York, by the way of Goshen and Newburgh. After a week's continuance in Batavia-lane, he was received into the Hospital on the 11th August. At that time he had become so much debilitated that he could scarcely walk. His ankles were œdematous, and there was a troublesome pain in the left hypochondrium. His febrile symptoms were exceeding-

ly anomalous, and the paroxysms, which had never been preceded by chilliness while he was in the country, assumed, sometimes, the type of a coldish stage, which terminated in a hot and sweating stage, of irregular returns, after his reception into the Hospital.

He took a mercurial cathartic, was blistered over the left hypochondrium, and ordered columbo and ginger, decoct. cort. peruv. and acid sulph.; under which remedies he has gathered considerable strength. His recovery proceeded gradually, under the above remedies and occasional emetics, until the 15th October, when his mouth became affected by the use of mercurial purgatives, which removed the occasional chills, swelled feet, and pain in the left hypochondrium. He was discharged, cured, Dec. 4th.

CASE II.

Patrick M'Gennigal, Irishman, aged 30—has been about four years in the United States. Was at the drowned lands last year, and was taken sick after nine weeks labour, at twelve dollars a month. The form of the disease was that of a quotidian and tertian intermittent, commencing with a cold and shivering fit. Notwithstanding which, he continued labouring long enough to make up the whole of three months work, by returning to service as soon as a cessation of the disease, from time to time, would permit. After this job was over, he was troubled with the paroxysms, by intervals, during the whole winter; sometimes escaping it for a week or more, and seized with it again. Notwithstanding all this suffering, he engaged in the employ, once more, this season, for the lure of fourteen dollars a month. He began to labour about the beginning of August: his employ was ditching, digging, and carrying earth and stone. While he was engaged in this business, he was frequently immerged in mud as high as the knees; and sometimes, when making the dam, he was in as deep as the waist. This year, he was taken sick about the 10th August. The first symptoms were a swelling of the legs and general debility, afterwards a chilliness and shivering, followed by severe hot fits. These recurred every day, for about fourteen days, when he removed to New-Windsor. There he languished for three weeks; the disease assuming the tertian type,

and finding himself rather better, got on board a sloop and came to New-York. From the sloop he came straight to the Hospital. Was admitted on the 8th Sept.

His situation was still febrile, with daily returns of his cold and hot fits. His legs, thighs, and body were swelled, with anasarcous effusion. There was heaviness and pain in the right hypochondrium; an uneasy sensation in the shoulder, and under the scapula of the same side.

For this patient, cream of tartar, in small doses, was for some time pursued, with little benefit. On the 20th he was put upon the use of the following decoction, rad. seneka ʒij. bac. juniper ʒi. fol digital gr. x. oquæ fervent. ℔j. Simmer them for a few minutes, and after being strained, he took two table spoonfulls every hour, increasing the dose according to circumstances. Under this, absorption took place, and much evacuation by urine was the consequence.

On the 24th he took a pill composed of calomel gr. 1, pulv scillæ gr. ij. three times a day. Under this, a further discharge of the accumulated water took place, and the hepatic disease was considerably relieved. Under the operation of this remedy, his mouth, in seven days, grew sore.—Since he was put upon the decoction and pills, he has had no return of the febrile fits. The salivation began about the 1st October, and during its continuance, he gradually and sensibly mended. On the 14th, a blister was applied to the affected side, which has removed the greater part of the remaining pain. He was discharged, cured, on the 23d October.

CASE III.

Martin Joyce, Irishman, aged 33—has been eleven years in the United States. Chiefly engaged as a seaman, in Portsmouth and Boston. Arrived at the Drowned Lands 15th August, induced by the wages, of being found and paid fifteen dollars a month. Was engaged in hauling rocks beside the ditch or drain. Was taken sick on the 11th day after he began to labour. His symptoms were headach, pain in the back and limbs, and continued fever, which lasted seven days, when he was seized with a chill which was severe, and was succeeded by a hot and sweating stage. Since that time he had a daily return of the fit in the form of a regular quotidian until the 10th October.

After lingering about three weeks near the Drowned Lands, he came to New-York, by the way of Goshen and Newburgh. On the 3d October he was received into the Hospital.

His paroxysms had regularly invaded him while he travelled. After his first seizure he had taken an emetic, a cathartic, cort. peruv. and wine, besides a variety of popular remedies.

When received into the Hospital, he complained chiefly of the severity of his paroxysms, and of the debility caused by them. The remedies employed were decoct. cort peruv. and serpentar. arsenical solution, and anodyne draughts to prevent the severity of the paroxysms.

His paroxysms continued to visit him, in the quotidian type, until the 14th October; they then left him until the 24th, when they returned with great irregularity until the 1st November, when it left him. He was discharged cured on the 18th November.

CASE IV.

Thomas Burns, Irishman, aged 30—has been in the United States about four years, chiefly employed as a seaman, from the port of Boston. Fearing impressment from the British, if he went to sea, he concluded to go to the Drowned Lands; and arrived there in the beginning of September. He laboured there sixteen days, for fifteen dollars a month, at digging and wheeling earth, but not exposed to the water, above the ankles. The water was warmish and not cold like spring water. He left this place and went to Wardsbridge, and was taken sick at the end of the first half day. The first symptoms were headach, want of appetite, pain in the back of the neck, and chilliness; then fever and sweating, as usual, succeeded. The paroxysms returned every day. After five days recurrence of fits, came in a waggon to Newburgh, whence he came to New-York in a sloop. He arrived on the 2d October and was received into the Hospital the same day.

At that time, he was visited every day with a chill and fever; rheumatic pains in the back and shoulders, and com-

plained of soreness, and aching in the left hypochondrium, about the region of the spleen.

He took an emetic, cathartic, and several of Dover's powder opiates were administered to check the onset of of the paroxysms; and cort. peruv. given at the intervals.

His paroxysms returned at irregular periods, sometimes every other day, and at other times every sixth or seventh day. He was discharged cured on the 29th November.

CASE V.

Thomas Boyd, New-Yorker, aged 36, labourer; went to work at the Drowned Lands on the 19th August, and laboured there on the dry soil, with the barrow and drag. At the end of the fourth week after his arrival, he was seized with pain in the head, giddiness, want of appetite, pain in the left hypochondrium, and fever. After three days he experienced a chill. This returned every other day, and was succeeded by regular hot and sweating stages.

He then left the place and returned to New-York, by the way of Goshen and Newburgh. He arrived here on the 1st October, and was received into the Hospital on the 7th, having staid at a house near the Fly-market in the intervening time, and suffered paroxysms each alternate day.

On being admitted, he complained of loss of appetite, headach, general debility, and tertian paroxysms. On the 10th the paroxysms became quotidian, and continued to recur daily until the 14th, but though they came on more frequently, they were less violent.

The remedies were an emetic, diaphoretic powders, arsenical solution. decoc. cort. peruv. with serpent. and acid sulph.

His fever continued in the form of a quotidian and sometimes tertian type, until the 18th November. His appetite and strength improved rapidly. He was discharged cured on the 4th December.

CASE VI.

James Derrick, Irishman, aged 29—has been eight years in America, chiefly in New-York, in the occupation of a carpenter. He arrived at the outlet, five miles from Goshen, the 8th September, and was to receive fourteen dollars a month. He was employed at the barrow and drag; and was taken sick on the 15th. He had no chill, but anorexia, pains in the head and limbs, and a kind of feverishness, which for several days permitted him to do partial labour. Finally, however, he was obliged to give it up. On the 5th October, he came off, and proceeded, on foot, by way of Goshen, to Newburgh, from whence he arrived in a sloop at New-York on the 7th, and was received into the Hospital on the 10th.

He took an emetic and a peppermint draught before he left the outlet.

He complained, on being received, of pain in the breast, and of general exhaustion. On the 14th he, for the first time, experienced somewhat of chilliness. Under the application of a blister to the breast, a mercurial cathartic, diaphoretic powders and decoct. cort. peruv. and serpent. he is doing well.

His fever, during the present month, assumed in a considerable degree, the continued form; at intervals quite delirious, and in action resembled an idiot. About the beginning of November dropsical swellings appeared in the legs and feet, which were shortly removed by the free use of crem tart. digitalis and squills. Cort. peruv. used freely to restore strength. Was discharged cured Nov. 19th.

CASE VII.

Patrick Hanling, Irishman, aged 43—has resided in New-York about 22 years. Went to work at the Drowned Lands about the 10th September, in company with six others, to take the benefit of fourteen dollars a month as wages. Was employed as a digger and ditcher, and much of the time was in the water up to the knees. On the 10th day of his labour was seized, while at work, with severe headach, pain in the back and limbs, and was obliged to leave off and go to bed. Then came on a violent chill, which made him

wish for all the blankets in the house to cover him. This was followed by a hot and sweating stage. The fits returned every day for nine days. He then came to Goshen, thence to New-Windsor, and from thence to New-York, where, after continuing about a week in lodgings in Ferry-street, he came to the Hospital. In the latter place he took an emetic, cathartic, and some doses of cort. peruv. by which he was so far relieved that his paroxysms left him.

He was admitted October 13th, complaining of universal debility and griping pains. His pains abated in a little while without any remedy. He was put upon the use of cort. peruv. for his debility. He was discharged cured the 28th October.

CASE VIII.

John Riley, Irishman, aged 40—has been nine years in America, chiefly in New-York, in the capacity of a labourer. He arrived at the outlet about the 9th August, with three in company, and was to have fourteen dollars a month. He was employed at the barrow, dry digging, and crowbar. He was seized about the 9th September, with pain in the head and extremities, which was followed with a severe chill, that commenced about noon, and was succeeded by a hot and sweating stage. He continued working by the half day, notwithstanding his return of fever every day. A few days before he left the outlet his fever put on a tertian type. His appetite was vigorous at the beginning of his sickness, but was losing as the disease advanced. After working about two months at the outlet, he came to New-York by the way of Goshen and Newburgh. He took an emetic while there.

He was received into the Hospital on the 17th October with a tertian intermittent; pain from the left clavicle, extending down to the region of the stomach; cough, some difficulty of breathing, and great debility. He attributes the pain and cough to exposure to cold while on board of the sloop on his passage down the river. On receiving him he was bled, blistered, and took powders composed of glauber salts and ant. tart. which soon removed his pain, cough, and difficulty of breathing. He used the decoct. cort. and serpent. His strength improving very fast, he was discharged cured on the 24th October.

CASE IX.

James Cole, Irishman, aged 27, seaman; has been in America about seven years; sailing partly from New-York and partly from Portsmouth. Arrived at the Drowned Lands about six weeks ago, and worked about five miles from Goshen. His occupation was brickmaking. In a fortnight after he got there he was taken ill; was seized with a chill while at labour. This was followed by a violent fever, and profuse sweating. The fever lasted about three weeks without any recurrence of the chill, and was of the continued kind; then the shivering returned, and he has suffered a daily paroxysm, regularly from that time to the present.

While there he took an emetic and a cathartic; and no other medicine, either then or since. Finding himself exhausted too much to work, and being destitute of money, he got in a waggon and came to New-York, through Goshen and Newburgh. He got to town in a sloop on the afternoon of the 22d, having had his fits every day during the voyage. He had no symptoms of dropsical and hepatic affection; but the bilious and woeful countenance is strongly marked in him. And in addition to his weakness and quotidian attacks, complains of pains and increasing heaviness in the left hypochondrium, which obliges him to lie on the right side.

He was blistered over the left hypochondrium. He also used the peruvian bark in different forms, and occasionally emetics, with very little relief. He was then ordered the calomel pill, which affected his mouth, and caused the fever to disappear. He was discharged cured on the 16th December.

A TOPOGRAPHICAL DESCRIPTION *of* JEFFERSON COUNTY *in the State of New-York. By the late* Dr. HUGH HENDERSON. *Read before the Medical Society of the Commonwealth, during the winter of* 1809, *and communicated to the Editors by the President.*

THE county of Jefferson is situated between 43° 10′ and 44° 28′ north latitude, and between 1° 16′ and 2° 27′ west longitude, from New-York. It is bounded northerly by the St. Lawrence, which separates it from Canada; westwardly by the Ontario, southwardly by the county of Oneida, eastwardly by the county of Lewis, and northeastwardly by the county of St. Lawrence.

There are eleven incorporated towns in this county. The number of electors, agreeable to the census of last year, was 2005.

The face of the country is generally level. There are some ranges of hills, that run in a direction with the Black River and Ontario, at a considerable distance from the latter, but the lands near the St. Lawrence and lake are very level, and the banks low.

The climate of this country is not dissimilar to that of the same latitude in the eastern part of this state and Vermont. The ground is generally covered with snow, of a depth sufficient for sleighing, three months in the year. Its depth on the high lands during winter, is from one to four feet. On the banks of the lake and St. Lawrence, it seldom exceeds two feet, gradually increasing in depth as we recede from those waters.

The most prevalent winds are from the westward. They have this quality in them, different from what they possess near the Atlantic, that they bring snow or rain more frequently than the winds from any other direction. This peculiarity I impute to the contiguity of those vast bodies of water to the westward. It seems a bountiful provision of nature, that these reservoirs are stationed in the interior of our country, that their copious exhalations might be sufficient to water the surrounding territory. Were it not for these, the interior of our country, like that of Asia and Africa, would be a dry and barren desert. While they fertilize and render salubrious the adjacent territory, they

afford an extent of inland navigation unknown in any other part of the globe.

SOIL AND PRODUCTIONS.

The natural fertility of soil, in this county, it is presumed, is equal to any in the state.

It is timbered principally with maple, beach, elm, basswood, and birch. There are some extensive forests of pine, which afford excellent timber for building. The lands near the St. Lawrence and Ontario abound with black and white-oak, interspersed with pine and hickory. This timber is of excellent growth, and the situation admits of a transportation to the Canada markets with facility.

The lands when cleared, yield wheat, rye, Indian corn, oats, and grass, in abundance. Near the St. Lawrence they seem particularly adapted to the production of wheat, the quality of which is not, I presume, exceeded by any in the state.

RIVERS.

The St. Lawrence forms the northwestern boundary of the county and state. It flows out of Lake Ontario, near its northeasternmost extremity. The current is scarcely perceptible until it reaches the Thousand Islands. Its width to these is from three to ten miles; below, it seldom exceeds a mile and a half. The quantity of water that flows in this stream is immense. The Hudson and Mohawk appear like mere gutters in a comparison with it. Even the Mississippi, the king of floods in the United States, can scarcely surpass it.

The purity of the waters in this river, and the lake from whence it flows, has been a subject of frequent observation by travellers. In a calm, the bottom may be discovered at a surprising depth; the water affording a medium of vision nearly as transparent as air.

The Black River takes its rise in the high lands, near the sources of those streams which fall into the Hudson and the two Canada creeks; and after running about one hundred miles in a northwestern direction, discharges itself into Hungary Bay. From about twenty-five miles of its outlet, the current is rapid and unnavigable. Above this, to

the foot of the high falls, as they are called, a distance of thirty miles, it affords good navigation for bateaux.

Besides these there are several smaller streams, such as the Big and Little Sandy Creeks, and Stony Creek. These are unnavigable streams, but they water an extensive country, and afford a number of excellent mill seats.

ISLANDS.

The principal Islands are—first, Grand Island, situated at the outlet of the lake. It extends down the St. Lawrence about twenty miles, and is from three to eight miles in breadth. On it are about forty families. It is claimed by the British government, though it is uncertain whether they have better pretensions to it than ourselves.

Carleton-Island, so called from a fort erected on it by Sir Guy Carleton, is situated between the last mentioned island and the United States shore. It is about three miles in length, and from one to three in breadth, meriting no particular attention, except on account of the fortification it contains. The fort is situated at the upper end of the island on a high bank, having a good harbour on each side, both of which its guns command. It is sufficiently extensive to contain ten thousand men, but is, at present, only garrisoned by four soldiers. The works have considerably gone to decay, and the pieces of ordinance which remained, were, during our present differences with Great Britain, removed.

The Thousand-Islands are a numerous cluster, situated near the lower end of the Grand-Island. Of these I have little knowledge. Besides these there are Grimelin-Island, Stony-Island, Galew-Islands, and several smaller ones in the lake, within the limits of the County of Jefferson.

GEOLOGY.

Little attention has yet been paid to the minerals of this country.

As far as my observation extends, the soil seems to be almost universally underlaid with the carbonate of lime. It exists at various depths, approaching in some places so near

the surface as to render the soil unfit for cultivation. The strata of stone are generally horizontal, though in some instances I have observed them in an opposite direction. The banks of the lake St. Lawrence are almost entirely composed of this stone down as far as the Thousand-Islands.—Where the current begins to be rapid, the bottom and banks are granite, though with some mixture of lime. Should Mr. Volney ever explore this country he might, perhaps, adopt the bold opinion he formed in sailing up the Hudson. He might conjecture that the low country, adjoining the lake and outlet, was formerly overflowed, and that the attrition of the stream at the Thousand-Islands had worn the rocks and reduced the stream to its present dimensions.—This opinion would receive considerable support, as well from the appearance of granite at this spot, as from a view of the lime-stone, on the face of the country generally. There are such distinct traces of marine shells in the composition of all the stone I have yet seen, that I cannot resist the belief that either at the flood, or some period since, this country has been inundated by the waters of the lake.

I herewith present to the society a specimen of the carbonate of lime in a pulverulent form. Vast quantities of it are found by a small lake in the town of Champion, the bottom of which appears to be principally composed of it. It is used in the neighbourhood for the same purposes as Spanish white, and, I think, might be rendered equally valuable by manufacturing it in a similar manner.

METALS.

Iron ore has been found in various parts of the country, but the quantity in no place has been ascertained sufficient to justify the erection of works. A mine of plumbago has been found in the town of Harrison. It is unfit for pencils, being hard and coarse in the fracture, and mixed with a quantity of quartzoze earth. The proportion of iron to that of carbone is considerably greater than in common mines of this sort. The argentine brilliancy of the ore attracted considerable attention. It was supposed by many to be silver. A quantity of it being sent to Dr. Mitchill, an analysis proved it to be a carburet of iron.

ANTIQUITIES AND CURIOSITIES.

This County, like the western part of the United States in general, contains a number of old forts, and other indications of being peopled, by men whose habits were very different from the present American natives. The dimensions of these forts do not differ materially from those so frequently described by travellers on the Ohio and Mississippi. They are generally of an oblong form, and built contiguous to water.

Fragments of earthen ware are found all over the country, but more plentifully near these fortifications. I herewith present a specimen of them for your examination. To what nation these owe their origin, and at what time they were built and manufactured, is very uncertain. That they possess very great antiquity, no one who has viewed them will dispute. The earthen ware is generally found at a considerable depth in the earth, and no difference can be perceived between the timber that grows on the forts and that of the surrounding country.

The ignorance of the American natives in the arts of fortification and pottery, and their habitual indolence, have generally been considered as a conclusive objection to their ever being built by them. Dr. Robertson, in his history of America, observes, "That America could not be peopled "by any nation from the ancient continent, which had "made any considerable progress in civilization; because, "when America was first discovered, its inhabitants were "unacquainted with the necessary arts of life, which are "the first essays of the mind towards improvement, and if "they had ever been acquainted with them, for instance, "with the plough and the loom, their utility would have "been so great that it is impossible they should ever have "been lost."

This reasoning has generally been deemed conclusive; and the antiquities above mentioned, have been supposed to originate from some people who have either been driven out of the country, or exterminated. Some suppose the Spaniards, soon after their settlement in Mexico, penetrated a considerable distance to the northward, and built these fortifications. History, however, gives no account of their going so far north as the borders of Lake Ontario. An

excursion so remote from their settlements could not fail of being communicated, had it ever taken place. The aspect of these antiquities seems too ancient to be limited to any European settlement in America, and I think it next to impossible, that a civilized nation should inhabit, and erect fortifications over such an extent of country, without publishing one solitary circumstance to the world.

It has been again conjectured, that a number of Europeans had been driven accidentally, in a storm, upon the American coast; and that being unable to return, they erected these fortifications to defend themselves from the savages. These afforded them protection for a time, but at length they were overpowered and destroyed by the more numerous natives. One fact, will, however, set this hypothesis, in my opinion, completely aside.

None of these fortifications are found, except in the inland parts of the continent, a truth that cannot be reconciled with the belief that they were built by a people driven accidentally on our shores in a storm.

Could the American natives formerly have understood the arts of fortification and pottery, and since have degenerated so far as to have lost them? This opinion is variant from that of Dr. Robertson, but is the one which, to me, appears the least objectionable. He supposes that a people will not degenerate so far as to forget the necessary arts of life, and that if they were once acquainted with the plough and loom, their utility would be such that they would not have been lost. I do not see why the uses of the plough and loom can be called necessary arts of life, in a country where the game is sufficient to afford clothing and food for the inhabitants. There is something peculiarly fascinating in the pleasures of the chase, and the native indolence of the human mind would favour the propensity to it. It is generally admitted, that agriculture and civilization go together. No nation can enjoy the benefits of society in their fullest extent, who do not make agriculture their principal employment. It can be no matter of surprise, therefore, that the original inhabitants of America, who, perhaps, came here an agricultural people, should be allured by the pleasures of the chase; and finding they could procure the necessaries of life by it, should prefer it to the labour of tilling the soil. Many people who have tried their method of living, as well as ours, do not hesitate to give theirs the preference. Men

delight to roam abroad; the range of the forest gratifies this propensity, and by thus indulging the love of freedom and native indolence of the human mind, can it be wondered that many should engage in an employment so alluring.

The transition from the civilized to the savage state is not a new fact in history. Where was all the boasted literature and civilization of Greece and Rome eight hundred years ago? Many arts which they practiced are still understood in a less perfect manner than they were then. Their architecture and sculpture afford such exquisite models of beauty and taste, that they even surpass our powers of imitation. Reasoning thus from the analogy of other nations, I deem it not too much to say, that a nation may degenerate so far as to forget what Dr. Robertson terms the necessary arts of life. At least, I cannot attribute the origin of these antiquities to a more satisfactory cause than to the ancestors of the present American Indians.

A CASE *of* DISEASE, *supposed to arise from Poison, attended with extraordinary Symptoms. By* Dr. ARNELL, *Secretary to the Medical Society of Orange County.*

LITTLETON, a servant man, belonging to Mr. William Phillips, aged 26 years, generally of a healthy appearance through life, began to complain in the month of September 1806, at distant intervals, of slight nausea, and sometimes vomiting, but so trifling as not to excite much attention. In October, the aid of a Physician being requested, found him labouring under the above symptoms, increased, and accompanied with slight strabismus, but without any visible dilation of the pupil, and a slight obtuse pain in the head, attended with drowsiness and lassitude of the system, pulse natural, appetite somewhat impaired, bowels regular, sleep a little disturbed. The general course of prescriptions through this month were, 1st. Emetics, without relief; 2d, Cathartics, and 3d, blood letting, equally unsuccessful. In the latter part of this month some of the symptoms became materially increased, to wit, nausea with frequent disposition to vomit, strabismus, cardialgia, appetite bad, a slight disposition to diarrhœa with tenesmus, sleep disturb-

ed with frightful dreams, urine a little turbid, pulse natural, pupils of the eye not visibly dilated. Prescriptions during this period were, cathartics of different kinds, blood letting, and epispastics behind the ears; all without any visible effect for the better. In the fore part of November the foregoing symptoms became materially increased; an almost constant retching to vomit, tenesmus and diarrhœa extremely distressing though little discharged, slept very little, started often, screaming as if terrified, strabismus much increased, pulse regular, epistaxis frequent, blood buffy, appetite entirely gone, obtuse pain in the head. The predominating symptoms agreeing so well with those described by Dr. Quin, on Hydrocephalus internus, led to a conclusion that water was collecting in the brain. The patient was strongly impressed that some kind of poison, had been given him by a female servant, and in consultation with three gentlemen of the faculty, we became divided in sentiment; it was therefore considered advisable, in some measure, to alter the prescriptions, and consider poison, sometime past administered, as constituting the cause of his disease. Epistaxis more frequently occurring, recourse was had to more frequent blood letting, but without checking it, except for a few minutes, and though he was often bled until near fainting, the pulse became but little weaker, and that for a short time. Alkalines, in small doses, were often given, but without effect, and the warm bath made use of with as little success. At this period the pulse was about 80, and rather tense, but the strength of the patient appeared rapidly failing; the disposition to vomit became less with an increase of tenesmus, pain of the head somewhat diminished. About the 10th of November the loss of sight was almost total, sleep much disturbed, epistaxis almost constant, strength rapidly failing, pulse rather weaker than in health, number about 80; cardialgia, attended with extreme anxiety and uneasiness of the whole body; these constituted the most prominent symptoms during the last days of his illness. Dr. Phillips, who was present during the last moments of life, bled him twice on the last day; the blood showed an inflammatory crust. The epistaxis continued from its commencement till his death; blood letting once and twice a day was resorted to, as the strength of the patient would admit; the pulse continued regular,

and about 80 strokes a minute, till within fifteen minutes of his decease.

From the extraordinary and peculiar circumstances of the above complaint, it is to be regretted that an exact statement of the symptoms and treatment had not been made from its commencement; but the disease assumed a more formidable and interesting appearance than was at first contemplated.

His master being in New-York when he died, I could not obtain liberty to dissect him until his return, which was 83 hours after his decease; when the following were the appearances upon dissection.

No external appearance to characterize any disease, no putrid effluvia, no purple or livid spots, no unusual appearance of the genitals; the epidermis was close and firm, the hair firmly fixed in the scalp, abdomen not in the least tumid, but perfectly collapsed as when he first died. On dividing the integuments of the cranium they appeared white, sound, and perfectly natural. On removing the integuments and the upper part of the cranium, nearly horizontally, the blood vessels of the brain appeared very turgid, and exhibited strong marks of inflammation; two small vesicles of water appeared on the superior lobe of the left hemisphere of the brain, just beneath the pia mater.—After dividing the two hemispheres through the falx and corpus callosum, down to the cerebellum, two transverse incisions were made through the cerebrum horizontally, so as completely to expose the right and left ventricles; there was no collection of serum or any other fluid. On laying open the abdomen, the intestines appeared sphacelated in detached portions through their whole extent. The mesentery was quite putrid, but the integuments and muscles appeared entirely sound, showing no signs of gangrene. The stomach was quite empty, its external appearance quite uniform, shewing no more signs of decomposition than might be expected, considering the time since his death. On opening the stomach, the internal coat appeared to have considerably suffered from inflammation, was uniformly sphacelated, and very much so in comparison with the external or muscular coats.

If I had not been disappointed in finding water in the ventricles of the brain, my impressions would have remained, that his case was hydrocephalus internus; but as it was,

the symptoms and appearances, upon dissection, do not agree with those which take place after taking poison, nor any other disease marked by nosologists. I am perfectly at a loss where to rank it, but am convinced that it depended upon too great excitement of the system, and am satisfied with the treatment. It may not be improper to remark, that I have, in two instances, the last summer, cured the epilepsy with the acetate of lead and sal. martis.

PRACTICAL REMARKS *on* VACCINATION *as a preventative of* SMALL-POX: *in a letter from* Dr. SAMUEL AKERLY, *to* Dr. MILLER, *dated New-York, 10th July*, 1809.

DEAR SIR,

IN April last I related to you the circumstance of the contagion of variola being propagated by inoculation, after vaccination, in the child of Mrs. Unice Horne. The cautions which you then gave to prevent mistake, were observed, and I now have the satisfaction of stating the result of that case, and observations growing out of it and the practice of vaccination.

Mrs. Horne's daughter, aged about eleven months, was vaccinated by its mother, from the arm of Dr. Thorn's child, at the time he took infection for his own use. Success attended the operation, and the mother submitted the child to Dr. Thorn's inspection, who declared the disease to be genuine, and, from repeated observations, its progress to be natural. It left a cicatrix on the leg where the vaccine matter was inserted.

About two weeks after the child recovered, the doubts of the mother were expressed as to its safety from small-pox, and a Dr. William Knowles assured her that she need not apprehend the least danger, and, to satisfy her, he offered to test her daughter with the small pox, which he had no doubt would prove abortive. The test was applied, and the child unfortunately received the variolous poison, and in due time the fever and eruption appeared. I saw the child on the second or third day of the eruption, and inquired

into the facts as I have here stated them. Several days after, Dr. Benjamin Prince accompanied me to see the child, when we witnessed the pock to be numerous, full, and distinct; the cicatrix left by the vaccine disease easily distinguished.

The prevalence of the small pox, during the last winter, gave rise to much animadversion and complaint; for, besides the disease being mortal, in many instances, it spread through the city, and some parts of the country, attacking, in a number of instances, those who had previously been vaccinated. As many cases of this kind have been related, whether true or not, they have had some effect in withdrawing the popular favour from the cow-pox. I vouch for no other than the instance above stated, which I saw; though, if fear did not prevent them from being exhibited, we might have numerous facts of the like occurrences, and be better enabled to determine how great was the agency of this "mild infection," in preventing the ravages of the small-pox. Though, in general, I am an advocate for vaccination, I would not smother the accounts which militate against it, and which are probably more numerous than the public are aware of, lest, by so doing, we rest our hopes in a false security. The object of such a proceeding would be to weigh the evidence of opposing facts, and strike a balance, to prevent running into extremes; neither to attempt to make this temporary residence of mankind a paradise, by annihilating disease, nor with Moseley and his chosen few, sword in hand, to attack the temple of Vaccina,* and, like Mahomet and his followers to rush to battle with enthusiasm and madness.

The idea of annihilating the small-pox by vaccination is enticing, but I can scarcely admit it to be within the bounds of probability. It is well known that small-pox has (apparently) had a spontaneous origin, and still appears occasionally in an epidemic form. We cannot suppose that the whole human race, or even the civilized world, will, at any period of time, have passed through the vaccine disease; and could it once be admitted, the continual increase of mankind would soon alter their situation as respects this circumstance. The fluctuation in such an imagined security, or rather the continual formation or increase of mate-

* See Mofeley's and Lipfcomb's pamphlets on the "*Lues bovilla.*"

rials for the variolous contagion to operate upon, would always render the human race insecure from its attacks. On this account, therefore, we should be ever liable to a return of the disease. Such a supposition shows the futility of the philanthropic expectation that small-pox will be superseded by vaccination. The latter has, indeed, a cause within itself, why it never will subdue the former; and this is its own mildness, from which a false security will always result. The mildness of the kine-pox has induced a great uncertainty in the result of the vast numbers that have been inoculated, as the rage for vaccination induced many to circulate the infection, who were not professionally prepared to know and distinguish it. This practice still continues, from the little danger and responsibility that are imposed upon the many who vaccinate; some from motives of philanthrophy, some of gain, and others through fear of expense. Who can say that all those who have already been vaccinated are secure from small-pox? Besides this, is it possible to produce a uniform opinion and belief respecting the vaccine disease?* As this could not be effected, it would be itself an obstacle to the success of the cow-pock.

The promiscuous vaccination that has taken place, continually diminishes the security which the disease is intended to uphold. Hence may be accounted for some of the cases in which variola has succeeded well attested vaccination. I say some of the cases, for I do not believe in the infallibility of the mild disease, since even the small-pox has, in many instances, appeared a second time in the same person.†

Although the small-pox has been more or less prevalent in New-York for a number of years past, it did not spread

* There is no greater probability of inducing a uniform opinion on this than on any other ſubject. There will always be two ſides to a queſtion when inquiry is free and open. The attempt made laſt winter in the Legiſlature of New-York, to introduce a bill prohibiting the inoculation of ſmall-pox, was idle and prepoſterous, and made without the leaſt knowlege of mankind. It would have been the very means of ruining the cauſe which it was intended to eſpouſe. Science is not fixed in its application and extent, but is, and perhaps always will be, progreſſive. To clog it then with ſuch a law, is laying it under reſtrictions from which it ſhould ever be free.

† An inſtance of this kind happened under my own eye, in January, 1809, in a boy ten years old, who eight years previous had been inoculated with ſmall-pox. He had the diſeaſe moderately, by his grandmother's account, who attended him then and lately. He had it the natural way laſt, but very full and diſtinct.

epidemically, as it appeared during the last winter (1808—9). The spirit of vaccination had a rapid spread, until the fear of small-pox vanished, and then it was suffered to decline, which happened some time previous to the breaking out of the small-pox. That this was the case, I judge from the little conversation respecting the cow-pock, and the few or no applications that were made to the institution for propagating it.* Hence the increase of numbers on which the small-pox would have influence. Thus, I say, there is a radical uncertainty, from the inducement which vaccination upholds, that it will ever annihilate small-pox.

The difficulty of inducing the vaccine disease is a great bar to its success and usefulness. This appears in many instances to depend upon the mildness of the infection, apparently wanting some additional stimulus to excite it into action. In a family where small-pox had appeared, I vaccinated the mother and her child on the first day of the eruption. In four days no appearance of a pock was observable, and the operation, with more recent infection, was repeated on both. In four days more no disease was evident, and the small-pox was at its height. It was now determined that inoculation with small-pox should be performed on the mother and her child. In due time the woman had the small-pox, very light, but her child had both. The little one had one day of fever and drowsiness, but was thence playful and lively. On its arm were two distinct vaccine vesicles where the infection had been inserted, about an inch apart. There was also a variolous pustule, beside one of the cow-pox. This latter was perfectly distinct and regular in shape, but diminutive in size, seemingly oppressed, though raised into existence by its more powerful neighbour. The other pox were distinct variolous pustules, but not numerous.

I am certain as to the distinctness of the two diseases, their existence together, and regular progress at the same time. Dr. Beekman was witness to this case, and from his former residence in the Cow-pock Institution, as inoculator, I deemed him a capable judge. In this instance the vaccine vesicles may be said to have been spurious, especially as

* In New-York the Cow-pock Institution is connected with the City Dispensary. My connection with the latter institution gave this opportunity of judging.

two attempts failed of inducing the disease in others with infection taken from the most perfect. I am not, however, aware of the spurious disease taking on itself so exact a resemblance to the original. Could this be admitted, the uncertainty arising from vaccination would be increased.—That others may judge for themselves, I will state the facts. On the eighth day of the regular progress of both diseases, (16 from the first, and 12 from the second insertion of the vaccine,) I armed my lancet and several quills with the infection of the largest vaccine vesicle. I crossed the street immediately, and made use of the infected lancet and one quill, on my own child, then about one month old. Several days after, some of the same infection was used on another child, and likewise failed.

Great uncertainty arises from the true often producing the spurious disease. I obtained recent infection from a physician and vaccinated my own, and another child. The result of these was, that in one case the spurious disease, and in the other none was produced.

While we observe these things, and record the facts which are unfriendly to the cow-pock, in order to arrive at truth, we should rescue it from imputations founded in falsehood. In January, of the present year, Mr. Bryan's son was much affected by a fever, on the third day of which a cutaneous eruption appeared, alarming the parents with the fear of small-pox. The boy had been vaccinated two or three years previous. A neighbouring female gossip, who was in the habit of inoculating for the small-pox, and was an enemy to vaccination, declared it to be the former. The uneasiness of the parents induced them to request my opinion, which, upon examination, I gave contrary to the female practitioner. Not being satisfied, however, with the correctness of my own opinion, I requested Dr. Valentine Seaman to see the patient. On the third day of the eruption, the doctor accompanied me, and after seeing, expressed his doubts, saying, that it was only to be determined by observing the progress of the disease; adding, that he would not be surprised if it should be small-pox, as he knew the ignorance of the man who vaccinated the child.

In the commencement of the eruption it was very much like the small-pox, only wanting its peculiar rounded shotty feel. As the disease proceeded, the appearance of small-pox gradually receded, the eruption flattening and drying

away without suppuration or scab, leaving only a thin skin which wore off. By the tenth day, that which first came out had nearly disappeared, but new eruptions continued to show themselves, and were, in like manner, succeeded by others. These eruptions were quite numerous on the body, but in distinct blotches, several smaller ones appearing confluent in each.

Accurate investigation would, perhaps, rescue many alleged cases from the imputation of small-pox subsequent to vaccination. A knowledge of this case had spread very rapidly previous to my seeing it, and some weeks after I had the satisfaction of checking its circulation, when it was produced as a sure instance of the inefficacy of the cow-pock.

From observation and experience, I am led to believe, that although much doubt and uncertainty sometimes attend vaccination, yet, if continued, it will diminish the ravages of small-pox, but not annihilate it. Variola appears to have had a gradual decline from 1803, to 1808, as will be seen by the following statement of its mortality in the city of New-York:

In	1804 died of the small-pox,	169
	1805	62
	1806	48
	1807	20*
	1808	58*

An ACCOUNT *of the* EFFICACY *of* BLOOD-LETTING *and* CATHARTICS *in the cure of* PALSY, *with Observations on that Disease; communicated by* Dr. HUNTING SHERRILL, *of Clinton, Dutchess County, (N. Y.) formerly resident in the New-York Alms-House, to* EDWARD MILLER, *M. D. Professor of the Practice of Physic in the University of New-York. Dated June 30th,* 1810.

THOSE who have made examinations of the brain, after death, in persons who have been affected with palsy, have ascertained that there is, generally, a compression of the origin of the affected nerves; owing to an ex-

* Theſe were obtained by examining files of the Weekly Muſeum, but the numbers are too ſmall, as ſeveral papers had no reports of the mortality; the other years are correct as obtained from the City Inſpector's office.

travasation of blood, or an effusion of fluid in somepart of the brain. This observation is supported by a number of writers, among whom may be mentioned John Hunter, Townsend, and John Bell. And this appears to be the immediate cause of the nerves, and muscles dependent on them, having lost their power of action. Any case of palsy, where the nerves are injured or compressed, after they emerge from the brain, is not included in this account. In injuries of the head from external violence, where there is a compression of the brain by a depression of the scull, an extravasation of blood, or a collection of matter within the cranium, surgical writers agree that palsy, more or less extensive, is a common symptom, and experience confirms the remark.

Many of the symptoms exhibited by a patient, labouring under hemiplegia, or any considerable extensive attack of palsy, are very similar to those produced by compression of the brain, from local injuries of the head. Both are attended with distress in the head; in both the mental faculties are, generally, somewhat impaired, or are affected, in some degree, with stupor; and both have paralytic affections of the muscles, and they have a striking similarity in the state of the pulse. The practice of surgeons in those cases of local affections is established and uniform. They proceed to remove the compression by applying the trepan, elevating the depressed bone; discharge the blood, which is extravasated within the scull, or the matter which may have collected there; and which commonly affords almost immediate relief of the paralytic symptoms; or if it should not be thought advisable to use the trepan, (as is frequently the case,) he has recourse to remedies which answer the intention in a more indirect manner, and at the same time, prevent inflammation, which are such as those of the depleting class. From the apparent similarity of the effect on the origin of the nerves in the brain, produced by those two different causes, we would infer that a similarity of treatment might rationally be adopted in palsies not arising from local causes, to that used to remove an oppressed brain from local injury; with this difference, that while the surgeon, with his instrument, goes directly to the seat of the complaint, and removes the immediate cause by a manual operation, the physician must take a more circuitous route, and accommodate his remedies to the state of the sys-

tem, so as to carry off the compression by slow absorption from the brain, to relieve the affected nerves. Conformably with these principles, I made use of some remedies, which it appeared, were directed to the true pathology of this disease, in several cases which came under my care in the New-York Alms-house in 1808, the principal of which were blood-letting and cathartics. I was warranted in using blood-letting from its being indicated by this pathology of the disease, and from the states of the pulse noted in the annexed cases; in all which, Dr. Rush would recommend blood-letting, under certain circumstances; (see his *Defence of Blood-letting*,) and from the following observation in Hunter on the Blood, part 2, chap. 1. In palsy, he says, "We ought to bleed at once very largely, till the patient "begins to show signs of recovery; and to continue it till "he might begin to become faintish." By accommodating this remedy to the morbid actions of the arterial system, without having particular reference to the name of the disease, there appears to be no impropriety in continuing it as long as the state of the pulse and continuance of the symptoms indicate it.

Cathartics are used to promote absorption from other parts of the body in a variety of cases. Dr. Rush informs us, that he has long observed their good effects in palsies, and other cases of congestion in the brain; with this intention, they were used to relieve the oppressed nerves.

The following cases, selected from my case-book, will show the result of this method of treatment. It will be seen that the usual local remedies were used in the most of them, as likewise occasionally galvanism and electricity; but in a number of similar cases, where these were used alone, they appeared to afford very little permanent benefit; and they are probably useful only as auxiliaries to remedies which have a more general effect on the system. It will also be observed that these were principally recent cases. What effect this treatment may have on those of long standing, time and observation alone will determine. From its effects on No. 2, it is more than probable that it may be of service in some of them.

Owing to the obliging disposition of the visiting physicians, Dr. Hosack, and Dr. M'Nevin, these cases came solely under my management.

No. 1.

——— Baxter, aged about 60 years, was attacked with a paralytic affection on the 15th June 1808, which affected the right arm, hand, and side of the head, attended with considerable headache. It deprived her of the use of the arm and hand; speech was slightly affected; pulse small and firm. She took a cathartic of sub-muriate of mercury, gum aloes, gum gamb. āā gr. viij, and used stimulant friction to the limb. The cathartic produced several evacuations from the bowels. The next day she felt somewhat relieved of the headach and numbness. On the second day the cathartic was repeated. She continued to convalesce. She was electrified once, but so disliked the sensation it produced, that she would not submit to it a second time. The cathartics were repeated once in about three days; the local remedy omitted. In about 10 days all the symptoms left her, and she enjoyed the full use of her arm.

No. 2.

James Travis, aged 49 years, was admitted into the Hospital October 28, 1806, with a hemiplegia. When admitted, as I was informed, he had no use whatever of the affected side. Was helpless and entirely speechless. By the use of the treatment which had been employed, he had recovered a partial use of his speech; could hobble across the floor indifferently, with assistance; and could give his arm considerable motion. June 20th, 1808; for about six weeks past, he has been under a course of treatment recommended by Mr. Rowley, in his treatise on diseases of the eyes, p. 23, consisting principally of mercurials, antimonials, camphor and aloetics, given together or separately in small doses, with vesicatories and stimulants externally; from which, however, he derived no benefit whatever. Several months previous to this, he had been under no particular plan of treatment; pulse small, full and tense; he was bled to sixteen ounces; it nearly produced syncope; pulse better after it; thinks himself better; in a week the bleeding was repeated to 20 oz.; effect as before; he was electrified, and used local stimulants: he walked better and

raised his arm higher than ever before since his attack. In another week, has taken 2 or 3 cathartics of sub-muriate of merc. gum gamb. gum aloes, āā gr. 10; they produced several discharges, but were not excessive; bleeding repeated to 24 oz.; slight syncope ensued; gains more use of his limbs. In a week, again; pulse small and tense; bleeding repeated to 24 oz.; syncope ensued; the blood contained yet as great a proportion of crassamentum as at any of the former bleedings; continues friction, with tinct. canth. In two weeks more, has taken cathartics once a week; walks indifferently without a staff; with difficulty, he can raise his arm as high as his head; pulse small, but considerably tense; was bled 20 oz.; no particular effect ensued; was galvanized daily for two or three weeks, by receiving sparks from Mr. Cruickshank's galvanic trough. It was omitted, principally, for want of time; from the multiplicity and variety of cases that required attention. The depleting plan was continued 5 or 6 weeks longer, but with not so great a degree of steadiness; during which time he was bled 4 or 5 times, and took several cathartics, but did not derive the benefit from it, which he had done, though he gained somewhat. The disease proving obstinate, and the prospect of succeeding being somewhat gloomy, the case was given up; at which time, he could walk without a staff, raise his hand to his head with ease, and enjoyed good general health. He remained in about this situation, until about the first of October 1809, during which time, he used no particular remedies, as he informs me. Since which, he has gradually lost considerably the use of his limbs again.

No. 3.

D—— M'Lain, aged 28 years, a native of Ireland; was brought to the Alms-house, on a cart, on the 8th July, 1808, completely helpless, from a paralytic affection of the left side. The left arm and leg hung motionless. Had considerable stupor, and a numbness of the whole left side, and of the tongue; he was entirely deprived of his speech; could only make an imperfect guttural sound. By signs and expressions, it was ascertained, that he had little or no pain, except in the head and some distress in the region of the stomach. The attendants who came with him, in-

formed me, that he was suddenly attacked with those symptoms, on the 4th July in the morning; previous to which, he had enjoyed good health. His pulse was small, slow, and tense. An emetic was given on the 9th, which discharged a quantity of foul mucous matter from the stomach; emetic was repeated on the 10th and 12th, and rubefacients, with friction, daily; by which his tongue, and the distress at the stomach were somewhat relieved; pulse became more regular. He was now put on a course of cathartics, composed of sub-muriate merc. gum gamb. gum aloes, āā 10 gr.; their operation was pretty brisk, but not excessive; they were repeated once in 4 or 5 days; sometimes, however, the gamboge was omitted; at others, the aloes, and sometimes jalap or rhubarb was substituted for one of those. Rubefacients were continued, and were occasionally varied from one article to another of that class. Aug. 1—he had recovered the use of his speech, so as to converse somewhat intelligibly; the use of his leg, so as to move it in any direction, and a trifling power of moving his arm; pulse small and tense; appetite and general health rather improved. Complaint has remained stationary for ten days past. He was now bled to 16 oz. which induced a disposition to syncope; other remedies continued, but the cathartics not so often. After the bleeding, the pulse better; bleeding was repeated, whenever the pulse became preternaturally tense, or so much so, as to bear the lancet, which was about once a week. The quantity of blood taken, at each bleeding, was from 12 to 24 oz. He was galvanized through the affected parts. Sept. 1—has been gradually recovering, since pursuing this plan; begins to walk about the ward with a staff; gives the arm considerable motion, and has recovered the use of his speech. The galvanism was continued but about a week, owing, in a measure, to the reason mentioned in the preceding case, but partly from its not appearing to come within the indication on which the case was treated. The cathartics were repeated once a week, and the bleeding once in two weeks; he was electrified occasionally, and occasionally used friction to the skin. Oct. 1—he has perfectly recovered the use of his leg, and walks about town without a staff, and converses well; has no symptom now remaining but the affection of the arm, which he can raise to a horizontal position, and make some use of it. He enjoys very good general health, and has

acquired considerable flesh. Electricity was continued but a short time, being obliged to leave town; the treatment was suspended; soon after which, I relinquished my situation in the House, and it has not been resumed since.—He has been under no regular treatment since, as I am informed, and remains in nearly the same situation yet.

No. 4.

A—— B——, about 55 years of age, had long been a resident of the house. Aug. 25; was attacked with a paralytic affection of one of his arms, shoulder, and side of his head; speech considerably affected; attended with headach; pulse slow and firm. He took sub-muriate merc. gum. gambog. ā ā 12 gr.; bathed the arm with vinegar, in which mustard seed had been infused. Next day he was somewhat better. The cathartics were repeated once in 3 or 4 days. In about three weeks from the attack he was discharged from the medical department of the house, cured.

To which the following case may be added.

No. 5.

Mrs. —— ——, a lady of this town, aged 27 years, of delicate habit, and slender make; about the middle of December last, was deprived of the use of her right arm and hand; attended with pain in the head, and some vertigo. Local applications were made to the affected limb, of stimulants and frictions; and she took mustard seed in small doses. This kind of treatment was pursued until the 9th February 1810, when I first saw her; at which time the symptoms had increased, so that the headach and vertigo had become very troublesome; had pain and numbness in the right side of her head and face, in the inferior extremity, and in short, in the whole right side. From these symptoms it was concluded, that she was threatened with a more general attack of the complaint. Her pulse was small, slow, and firm. Appetite somewhat impaired; she was bled 6 oz.; took a cathartic, composed of sulphate potash gr. 12, pulv. rhei. gr. 8; sub-muriate merc. gr. 5,

which was repeated every 3 days. An issue was formed on the right side of the base of the os occipitis. She was using powdered mustard seed on the affected arm, which was continued. On the 17th, the issue discharged; cathartics operate well; symptoms rather abated; pulse full, small, and tense; was bled to 8 oz. and the other treatment was continued. On the 20th, pain and affection of the lower extremity entirely removed. Vertigo much better; recovered some use of her arm; general health improved; pulse small, tense, and slow; was bled to 10 oz.; bathe the arm with tinc. canth. daily; repeat the cathartics. March 5th—affection of the face entirely removed; arm much better; pulse tense; was bled to 8 oz.; the blood retains its usual proportion of crassamentum; and this portion, if any thing, had a larger quantity than natural. The cathartics were now taken about once a week; omitted the tinc. canth. and merely rubbed the limb. She continued to convalesce. By the 17th March, had recovered the use of her arm, except the wrist and hand; when she awoke in the night, and found herself entirely relieved of all the paralytic symptoms, and enjoyed the full use of her arm, except a slight weakness and some headach only remaining; since which, she has fully recovered.

THE following is the history of a case that came under my care in the City Dispensary. If you think it will be acceptable to the public, you will be good enough to give it a place in the Medical Repository.

Your humble servant,

E. FITZ R. SMITH.

New-York, March 26, 1810.

CASE *of* CONTUSION, *followed by a remarkable* RETENTION OF URINE: *Communicated to Dr.* MILLER, *by Dr.* E. FITZ R. SMITH, *Physician in the City of New-York.*

LYDIA ——, a servant maid, slipped on the ice and struck her pudenda against the edge of a board. Great inflammation succeeded, and an immediate suppression of

urine took place, although in the act of going out for the purpose of voiding it. The accident occured on 25th January, and on 27th I first saw the patient. She complained of no pain, except soreness of the parts; had rested well, and was without symptoms of fever. She said she had passed no urine since the injury, except once or twice, about a tea-cup-full, bloody, and accompanied with great pain. Some of it I inspected, and found small coagula of blood, mixed with the water. Upon examination, for the purpose of introducing the catheter, the labia and small neighbouring glands were found so much tumefied and deranged, that the attempt to afford relief, in this way, proved unsuccessful. Ordered fomentations, emollient applications and rest; 28th, symptoms the same. Ordered a brisk cathartic. 29th, medicine operated well. No alteration of symptoms, except a little tension of the pulse. Took from the arm ten ounces of blood; and in the afternoon succeeded in introducing the catheter, but without obtaining more than a spoonfull of water. The singularity of the case now fully appeared. Four days had elapsed since the accident, when the bladder must have been full; and in that time she had passed only about eight ounces of water, at the end of which the bladder was found empty. There was no reason to suspect an accumulation in the kidneys or ureters, else there would have been pain, and other specific symptoms; in short, it was obvious, there had been no urine secreted. Her appetite had been indulged, and she had not refrained from drinks. On the 30th, my colleague, Dr. Robson, was called in consultation, who agreed with me in opinion, that this was an extraordinary case of suspension of the secretion of urine. Symptoms same as yesterday. Passed no water, no tumefaction of abdomen, no uneasiness of any kind. Ordered a powder consisting of nitrate of potash, grs. x. sub-muriate of mercury, grs. ij. repeated three times a day. Saturnine application to the parts. 31st; inflammation and sense of soreness much abated; great anxiety; tense pulse; restless during night; passed no water; stomach rejected last powder; no alvine evacuation since 29th. Ordered the common enema to be administered immediately, which afforded much relief. Substituted for the powders, tincture of digitalis, twenty drops, three times a day. Directed a cathartic of calomel and jalap to-morrow morning. February 1st, complains of

pain across the loins; bladder empty, but no passage of water; pulse small and tense; little appetite: cathartic, assisted by injection, operated well. Ordered tincture of digitalis, increased two drops at every dose, and a calomel pill of one grain, with a little opium, three times a day. Drink plentifully of flax-seed tea. 2nd. Pain in the loins subsided. Pulse slow and more full; passed half a tea-cupfull of transparent urine; medicines continued, with an injection daily. 3rd. Gums sore; pulse slow and wirey; little pain in the lumbar region; no passage of water; continued pills once a day, tincture as before. 4th. Very uneasy, with pain about the loins and region of the bladder, increased by pressure upon the abdomen. Pulse more hurried. Introduced the catheter and drew off a pint of limpid urine, which gave much relief. During the two following days the patient continued much as the last. Drew off, each day, half a pint of clear urine. On the 6th, observed some disorder of the stomach; suppose, in consequence of the digitalis, of which the last dose was 35 drops. Directed the quantity to be diminished 5 drops at each dose, down to 10, which continue. After this time the patient was enabled to pass her urine without assistance; at first, in small quantities, but gradually increasing. She continued the use of digitalis and the calomel pill till the 24th, when she was discharged cured.

In the history of this case, the most striking circumstance is, that of the suspended secretion of urine. During the first eight days of the disease, the whole quantity of water secreted, did not exceed half a pint, and in the latter four of these days, not a drop was made. That such an effect should arise from so slight a cause as an external injury to the pudenda, appears very extraordinary. There was no symptom of inflammation extending to the kidneys or even to the bladder; nor was there reason to suspect the existence of calculi in the urinary passages. Indeed, there is no possibility of accounting for the suppression of this necessary evacuation, but by supposing the function of the kidneys to have been entirely suspended. The appearance of small coagula of blood in the first passage of urine, I suppose to be owing to the injury of the external parts; as likewise the pain, upon attempting to make water, while the inflammation lasted.

I find no cases upon record in all respects similar to

this. Indeed, I believe the complete suppression of urine to be a very uncommon disease. Mr. Hey, in his "Practical Observations in Surgery," mentions that he has seen "but a few cases of the *ischuria renalis*, or complete suppression of the secretion of urine by the kidneys. The disease proved fatal in all" his "patients, except one, in whom it was brought on by the effect of lead taken into the body by working in a pottery. It subsisted three days, during a violent attack of the colica pictonum, and was then removed, together with the original disease."

With regard to the treatment of my patient, I have very little to add. In this we were almost without a guide; and the existing symptoms formed our only indications. I would remark, however, that notwithstanding a free exhibition of the digitalis, the kidneys did not show a returning disposition to their office, till the system began to be affected by the mercury. They were both continued with but little inconvenience, till the patient was discharged.

REVIEW.

TORPEDO WAR *and* SUB-MARINE EXPLOSIONS. *By* ROBERT FULTON, *Fellow of the American Philosophical Society, &c.* New-York, 4to. 1810, Elliot, pp. 60, with five prints.

IN the year 1807 we gave a particular and distinct account of this gentleman's method of blowing up ships, by setting fire to gunpowder beneath their bottoms. In 1808 we offered additional information on the construction and use of these destructive machines; and in 1809 our pages contained still further intelligence on the subject. See Med. Rep. Hex. 2, vol. v. p. 74, vol. vi. p. 181, and Hex. 3, vol. i. p. 191.

So obvious an application of the explosive power of gunpowder did not escape the notice of that distinguished teacher of experimental philosophy, *Desaguliers*, who, in 1734, published his course of natural philosophy at London. He there mentions (vol. i. p. 408) the fact that a fluid will sometimes resist as much as a solid; and relates an occurrence where, by the bursting of a torpedo, called by him a *water-rocket*, under a boat's bottom, in the river Thames, a hole was made which put her in danger of sinking: and this experiment, as well as several others, tending to the same point, was made some years prior to the printing of that learned gentleman's lectures; that is, about eighty years ago.

The present publication is an exhibition of his system of defence and attack, by the author himself. In this he has displayed singular ingenuity and skill; and the drawings which accompany the explanations, render the matter plain to every capacity. It was this very performance, aided by Mr. F.'s lectures and demonstrations at the seat of government last winter, that induced Congress to appropriate a

sum of money for the purpose of ascertaining, by new and repeated experiments, how far these factitious torpedoes may be relied on for destroying the floating force of an enemy.

Though we have conceived it proper to notice this publication, it would be too wide a departure from our plan to enter into a critical disquisition on its merits. These will be better understood after the contemplated trials shall have been made: and then will a more correct judgment be formed of the probable effect of the invention upon the intercourse of nations, upon the manner of conducting wars at sea, upon the expence of naval armaments, and upon various other points of inquiry, economical and political.

We anticipate signal advantages from the meditated experiments, and the bringing of this formidable apparatus into general use; and we hope it may be instrumental in realizing the author's motto, that "the liberty of the seas will be the happiness of the earth."

AMERICAN ORNITHOLOGY, *or the Natural History of the Birds of the United States: illustrated with plates, engraved and coloured from original drawings, taken from nature. By Alexander Wilson.* Vol. II. Imperial 4to. 1810. Philadelphia, Bradford & Inskeep, pp. 167.

THE first volume of this entertaining and elegant work was published about two years ago. Immediately after, a review of it was inserted in the 6th volume of our 2d Hexade, p. 155—162. We therein gave our opinion on the agreeableness and utility of natural history generally, and of the history of birds in particular. An account was also stated of the extraordinary merits of the performance, with our earnest hopes that the author might be enabled to persevere in his undertaking.

We are informed that, with a spirit that does honour to our country, a subscription has been obtained, sufficiently large to warrant the continuance of the different volumes, pursuant to the terms of the prospectus. Favourers of the design were found in almost every part of the union. This secures the work from failure through want of patronage. To this favourable occurrence ought to be added the ability and enterprize of Messrs. Bradford & Inskeep, the pub-

lishers, who have adopted measures for presenting to the world this charming performance, in a style of unusual excellence. The American Ornithology may therefore be considered as well provided for, and in good hands. The completion of it depends, of course, chiefly upon Mr. Wilson himself; and, if his health should be spared, we entertain no doubt that his stock of materials will keep pace with his zeal and his diligence, in the execution of his arduous task.

It is stated, on the appearance of this second volume, that the birds found within our section of North-America, may probably amount to about four hundred species. After proceeding thus far with his original plan, Mr. W. still entertains an opinion that they can all be comprised within the ten volumes. The six former will contain the land birds; the four latter will be occupied by the water fowl, including both the aquatics, strictly so called, and the waders.

For the further recommendation of this publication, it ought to be constantly borne in mind that the exquisite paper, the distinct type, the correct engraving, and the fine colouring, are all domestic; and the same American character belongs to the press-work, the binding, and the other mechanical parts of the work: the colours alone are exceptions; these are chiefly of foreign preparation. It is nevertheless expected that this dependence will not last long: our country abounds in native ingredients for paints; its inhabitants are making rapid improvements on them by processes of art; and, in a reasonable time, it may be foretold, that chemistry will render them wholly independent of all foreign supplies.

Forty-four species of birds are figured and coloured from the life in this volume. All the plates, except one, are from the hand of Lawson, and do him great credit, and that one is an engraving by Murray. The care taken to exhibit both the male and female, which, in some species, differ very much in their plumage, has rendered additional figures necessary. These, therefore, amount to fifty in the whole, besides various natural representations of the nests, eggs, and manner of feeding.

The birds whose histories are registered in the volume before us, are the mocking-bird, humming-bird, chewink, crested red-bird, (or cardinal grosbeak,) scarlet tanager, boblink, (rice or reed-bird,) red-eyed fly-catcher, marsh-

wren, great Carolina wren, yellow-throat warbler, king-bird, great-crested fly-catcher, small green-crested fly-catcher, phœbe-bird, wood.pewee fly-catcher, brown-thrush, golden-crowned thrush, cat-bird, bay-breasted warbler, chesnut-sided warbler, *mourning warbler*, *red-cockaded woodpecker*, brown-headed nuthatch, pigeon-hawk, blue-winged yellow warbler, golden-winged warbler, blue-eyed yellow warbler, black-throated blue warbler, sparrow-hawk, field sparrow, tree sparrow, song sparrow, chipping sparrow, snow-bird, pine-finch, rose-breasted grosbeak, green black-throated warbler, yellow-rump warbler, cerulean warbler, solitary fly-catcher, cow-bird, Maryland yellow-throat, blue-grey fly-catcher, and white-eyed fly-catcher.

The delineations of these are executed with remarkable skill and fidelity. The attitudes of many of them evince a minute acquaintance with their habits and manners. The figures of the humming-bird, rice-bunting, and chipping-sparrow, may be cited, from many others, as beautiful examples in this way. Much taste is also shown in the mode of grouping them; and we refer to the thirteenth, fourteenth, and fifteenth plates, as affording good illustrations of skill in placing on a page as much as it can contain, without overloading or crowding.

The descriptions which accompany the figures are very much in the style and manner of those contained in the former volume. They are replete with the information of an actual observer, improved by an acquaintance with the publications of the worthies who have gone before him. From a person so qualified, we might expect a full and genuine history of the fascination which serpents are said to practise upon the feathered race. In various volumes of our work are recorded the reasonings and opinions of ingenious naturalists on this controverted subject; Med. Rep. Hex. 1. vol. i. p. 79, vol. iv. p. 180, Hex. 2. vol. iv. p. 341, and vol. v. p. 113 and p. 257.

After so much discussion, leaving, nevertheless, an impression of some doubt on the minds of certain inquirers, the opinion of so high an authority as Wilson will command great respect, and contribute materially to settle the disputes still extant concerning this enchantment, of which the unfortunate birds are the victims. Now, in this case, as in many others, an entire acquaintance with the facts, disentangles the subject from all the marvel and mystery that had

been thrown around it. In the history of the mocking-bird, p. 15, the author states, that the parent is extremely attentive to her nest, and very apt to forsake it if much disturbed. During the period of incubation no animal whatever, not even man, can approach the nest without being attacked. The cats, among others, experience a full share of his force and spirit, generally obliging them to retreat: but the black snake, the sly and deadly enemy of the eggs and young, calls forth all the energy of the mocking-bird; when the approaches of the serpent are discovered, the male darts upon him with all possible fury, and inflicts severe wounds about the eyes and other parts of the head: in these parts the invader is very vulnerable, and the assailant employs remarkable management in avoiding his bite. In these battles the bird is generally too powerful for the snake; the latter becomes sensible of his danger, and attempts to crawl away, while the former renews the combat with redoubled exertion, and frequently kills his implacable foe before he quits him. All the boasted fascination of the serpent then fails him: instead of reducing the bird to his power, he is unable to save himself from the power of the bird. As his strength fails him, the bird seizes him with his bill, raises him up partly from the ground, and inflicts severe blows with his wings; and when the snake is deprived of life, or driven away to his lurking place, the brave and victorious bird returns to the nest, and utters a song of praise and exultation for the conquest he has atchieved. Also, in his account of the cat-bird, p. 95, our author bears strong testimony against the extraordinary faculty vulgarly ascribed to the snake. But the paragraphs are so apposite and clear that we make no apology for extracting them:

"The cat-bird is one of those unfortunate victims, and indeed the principal, against which credulity and ignorance have so often directed the fascinating quality of the black snake. A multitude of marvellous stories have been told me by people who have themselves *seen* the poor cat-bird drawn, or sucked, as they sometimes express it, from the tops of the trees, (which, by the bye, the cat-bird rarely visits,) one by one, into the yawning mouth of the immovable snake. It has so happened with me, that in all the adventures of this kind that I have personally witnessed, the cat-bird was actually the assailant, and always the successful one. These rencounters never take place but during the breeding time of birds; for whose eggs and young the

snake has a particular partiality. It is no wonder that those species whose nests are usually built near the ground, should be the greatest sufferers, and the most solicitous for their safety; hence the cause why the cat-bird makes such a distinguished figure in most of these marvellous narrations. That a poisonous snake will strike a bird or mouse, and allow it to remain till nearly expiring before he begins to devour it, our observations on the living rattle-snake at present kept by Mr. Peale, satisfy us is a fact; but that the same snake, with eyes, breath, or any other known quality he possesses, should be capable of drawing a bird, reluctantly, from the tree-tops to its mouth, is an absurdity too great for *me* to swallow.

"I am led to these observations by a note which I received this morning from my worthy friend Mr. Bartram. "Yesterday," says this gentleman, "I observed a conflict, or contest, between a cat-bird and a snake. It took place in a gravel-walk in the garden, near a dry wall of stone. I was within a few yards of the combatants. The bird pounced or darted upon the snake, snapping his bill; the snake would then draw himself quickly into a coil, ready for a blow, but the bird would cautiously circumvent him at a little distance, now and then running up to and snapping at him, but keeping at a sufficient distance to avoid a blow. After some minutes it became a running fight, the snake retreating, and at last took shelter in the wall. The cat-bird had young ones in the bushes near the field of battle."

"This may shew the possibility of poisonous snakes biting birds, the operation of the poison causing them to become, as it were, fascinated."

These facts may be considered as explaining upon a natural and obvious principle, one of the most perplexing phenomena in natural history.

To give our readers a further idea of the descriptive talents possessed by this modest and indefatigable ornithologist, we quote the passage in which he relates the musical performances of the *turdus polyglottus*, or American mocking-bird, p. 17.

"The plumage of the mocking-bird, though none of the homeliest, has nothing gaudy or brilliant in it; and had he nothing else to recommend him, would scarcely entitle him to notice, but his figure is well proportioned, and even handsome. The ease, elegance, and rapidity of his move-

ments, the animation of his eye, and the intelligence he displays in listening and laying up lessons from almost every species of the feathered creation within his hearing, are really surprising, and mark the peculiarity of his genius. To these qualities we may add that of a voice, full, strong, and musical, and capable of almost every modulation, from the clear mellow notes of the wood-thrush, to the savage scream of the bald eagle. In measure and accent he faithfully follows his originals. In force and sweetness of expression, he greatly improves upon them. In his native groves, mounted on the top of a tall bush, or half grown tree, in the dawn of a dewy morning, while the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent over every competitor. The ear can listen to *his* music alone, to which that of all the others seems a mere accompaniment. Neither is the strain altogether imitative. His own native notes, which are easily distinguishable by such as are well acquainted with those of our various song-birds, are bold and full, and varied seemingly beyond all limits. They consist of short expressions of two, three, or at most, five or six syllables; generally interspersed with imitations, all of them uttered with great emphasis and rapidity; and continued, with undiminished ardour, for half an hour or an hour at a time: his expanded wings and tail, glistening with white, and the buoyant gaiety of his action, arresting the eye, as his song most irresistibly does the ear. He sweeps round with enthusiastic extacy—he mounts and descends as his song swells or dies away; and, as my friend Mr. Bartram has beautifully expressed it, "he bounds aloft with the celerity of an arrow, as if to recover or recal his very soul, expired in the last elevated strain." While thus exerting himself, a bystander destitute of sight, would suppose that the whole feathered tribes had assembled together on a trial of skill, each striving to produce his utmost effect; so perfect are his imitations. He many times deceives the sportsman, and sends him in search of birds that perhaps are not within miles of him; but whose notes he exactly imitates. Even birds themselves are frequently imposed on by this admirable mimic, and are decoyed by the fancied calls of their mates; or dive, with precipitation, into the depth of thickets, at the scream of what they suppose to be the sparrow-hawk.

"The mocking-bird loses little of the power and energy of

his song by confinement. In his domesticated state, when he commences his career of song, it is impossible to stand by uninterested. He whistles for the dog; Cæsar starts up, wags his tail, and runs to meet his master. He squeaks out like a hurt chicken, and the hen hurries about with hanging wings and bristled feathers, clucking to protect its injured brood. The barking of the dog, the mewing of the cat, the creaking of a passing wheelbarrow, follow with great truth and rapidity. He repeats the tune taught him by his master, though of considerable length, fully and faithfully. He runs over the quiverings of the canary, and the clear whistlings of the Virginia nightingale, or red-bird, with such superior execution and effect, that the mortified songsters feel their own inferiority, and become altogether silent, while he seems to triumph in their defeat by redoubling his exertions.

"This excessive fondness for variety, however, in the opinion of some, injures his song. His elevated imitations of the brown-thrush are frequently interrupted by the crowing of cocks; and the warblings of the blue-bird, which he exquisitely manages, are mingled with the screaming of swallows, or the cackling of hens; amidst the simple melody of the robin we are suddenly surprised by the shrill reiterations of the whippoorwill; while the notes of the killdeer, blue jay, martin, baltimore, and twenty others, succeed with such imposing reality, that we look round for the originals, and discover, with astonishment, that the sole performer in this singular *concert* is the admirable bird now before us. During this exhibition of his powers, he spreads his wings, expands his tail, and throws himself around the cage in all the extacy of enthusiasm, seeming not only to sing, but to dance, keeping time to the measure of his own music. Both in his native and domesticated state, during the solemn stillness of the night, as soon as the moon rises in silent majesty, he begins his delightful solo, and serenades us the livelong night with a full display of his vocal powers, making the whole neighbourhood ring with his inimitable medley."

The peculiarity of that common bird, the *emberiza pecoris*, or cow-bunting, in not building a nest, but depositing its eggs in the nests of other birds, who foster and rear the young buntings instead of their own, is so very curious in itself, and so well told, that we cannot present our readers

a better treat than by extracting a part of the article from p. 185 and seq.

"The most remarkable trait in the character of this species is the unaccountable practice it has of dropping its eggs into the nests of other birds, instead of building and hatching for itself; and thus entirely abandoning its progeny to the care and mercy of strangers. More than two thousand years ago it was well known, in those countries where the bird inhabits, that the cuckoo of Europe (cuculus canorus) never built herself a nest, but dropped her eggs in the nests of other birds; but among the thousands of different species that spread over that and other parts of the globe, no other instance of the same uniform habit has been found to exist, until discovered in the bird now before us. Of the reality of the former there is no doubt; it is known to every school-boy in Britain; of the truth of the latter I can myself speak with confidence, from personal observation, and from the testimony of gentlemen, unknown to each other, residing in different and distant parts of the United States. The circumstances by which I became first acquainted with this peculiar habit of the bird, are as follow.

"I had, in numerous instances, found in the nests of three or four particular species of birds, one egg, much larger and differently marked from those beside it; I had remarked that these odd looking eggs were all of the same colour, and marked nearly in the same manner, in whatever nest they lay; though frequently the eggs beside them were of a quite different tint; and I had also been told, in a vague way, that the cow-bird laid in other birds' nests. At length I detected the female of this very bird in the nest of the red-eyed fly-catcher, which nest is very small, and very singularly constructed; suspecting her purpose, I cautiously withdrew without disturbing her; and had the satisfaction to find, on my return, that the egg which she had just dropt corresponded as nearly as eggs of the same species usually do, in its size, tint, and markings, to those formerly taken notice of. Since that time, I have found the young cow-bunting, in many instances, in the nests of one or other of these small birds; I have seen these last followed by the young cow-birds, calling out clamorously for food, and often engaged in feeding it; and I have now, in a cage before me, a very fine one, which, six months ago, I took from the nest of the Maryland yellow-throat, and from

which the figures of the young bird, and male cow-bird, in the plate, were taken; the figure in the act of feeding it, is the female Maryland yellow-throat, in whose nest it was found. I claim, however, no merit for a discovery not originally my own, these singular habits having long been known to people of observation resident in the country, whose information, in this case, has preceded all that of our school philosophers and closet naturalists; to whom the matter has till now been totally unknown.

"About the 25th of March, or early in April, the cowpen bird makes his first appearance in Pennsylvania from the south, sometimes in company with the red-winged blackbird, more frequently in detached parties, resting early in the morning, an hour at a time, on the tops of trees, near streams of water, appearing solitary, silent, and fatigued. They continue to be occasionally seen, in small solitary parties, particularly along creeks and banks of rivers, so late as the middle of June; after which we see no more of them until about the beginning or middle of October, when they re-appear in much larger flocks, generally accompanied by numbers of the red-wings; between whom and the present species there is a considerable similarity of manners, dialect, and personal resemblance. In these aerial voyages, like other experienced navigators, they take advantage of the direction of the wind, and always set out with a favourable gale. My venerable and observing friend, Mr. Bartram, writes me, on the 13th October, as follows.—"The day before yesterday, at the height of the northeast storm, prodigious numbers of the cowpen-birds came by us in several flights of some thousands in a flock; many of them settled on trees in the garden to rest themselves; and then resumed their voyage southward. There were a few of their *cousins*, the red-wings, with them. We shot three, a male and two females."

"From the early period at which these birds pass in the spring, it is highly probable that their migrations extend very far north. Those which pass in the months of March and April, can have no opportunity of depositing their eggs here, there being not more than one or two of our small birds which build so early. Those that pass in May and June, are frequently observed loitering singly about solitary thickets, reconnoitering, no doubt, for proper nurses, to whose care they may commit the hatching of their eggs,

and the rearing of their helpless orphans. Among the birds selected for this duty are the following, all of which are figured and described in this and the preceding volume:—the blue-bird, which builds in a hollow tree; the chipping-sparrow, in a cedar bush; the golden-crowned thrush, on the ground, in the shape of an oven; the red-eyed fly-catcher, a neat pensile nest, hung by the two upper edges on a small sapling or drooping branch; the yellow-bird, in the fork of an alder; the Maryland yellow-throat, on the ground, at the roots of briar bushes; the white-eyed fly-catcher, a pensile nest, on the bending of a smilax vine, and the small blue-gray fly-catcher, also a pensile nest, fastened to the slender twigs of a tree, sometimes at the height of fifty or sixty feet from the ground. The three last mentioned nurses are represented on the same plate with the bird now under consideration. There are no doubt others to whom the same charge is committed; but all these I have myself met with acting in that capacity.

"Among these the yellow-throat, and the red-eyed fly-catcher, appear to be particular favourites; and the kindness and affectionate attention which these two little birds seem to pay to their nurslings, fully justify the partiality of the parents. It is well known to those who have paid attention to the manners of birds, that after their nest is fully finished, a day or two generally elapses before the female begins to lay. This delay is in most cases necessary, to give firmness to the yet damp materials, and allow them time to dry. In this state it is sometimes met with, and laid in by the cow-bunting; the result of which I have invariably found to be the desertion of the nest by its rightful owners, and the consequent loss of the egg thus dropped in it by the intruder. But when the owner herself has begun to lay, and there are one or more eggs in the nest before the cow-bunting deposits hers, the attachment of the proprietor is secured, and remains unshaken, until incubation is fully performed, and the little stranger is able to provide for itself.

"The well known practice of the young cuckoo of Europe in turning out all the eggs and young which it feels around it, almost as soon as it is hatched, has been detailed in a very satisfactory and amusing manner, by the amiable Doctor Jenner, who has since risen to immortal celebrity in a much nobler pursuit; and to whose genius and humanity the whole human race are under everlasting obligations. In our cow-

bunting, though no such habit has been observed, yet still there is something mysterious in the disappearance of the nurse's own eggs, soon after the foundling is hatched, which happens regularly before all the rest. From twelve to fourteen days is the usual time of incubation with our small birds; but, although I cannot exactly fix the precise period requisite for the egg of the cow-bunting, I think I can say almost positively, that it is a day or two less than the shortest of the above-mentioned spaces! In this singular circumstance we see a striking provision of the Deity; for did this egg require a day or two more, instead of so much less, than those among which it has been dropped, the young it contained would in every instance most inevitably perish; and thus, in a few years, the whole species must become extinct. On the first appearance of the young cow-bunting, the parent being frequently obliged to leave the nest to provide sustenance for the foundling, the business of incubation is thus necessarily interrupted; the disposition to continue it abates; nature has now given a new direction to the parent, and the remaining eggs, within a day or two at most, generally disappear. In some instances, indeed, they have been found on the ground near, or below, the nest; but this is rarely the case.

"I have never known more than one egg of the cow-bunting dropped in the same nest. This egg is somewhat larger than that of the blue-bird, thickly sprinkled with grains of pale brown on a dirty white ground. It is of a size proportionable to that of the bird.

"So extraordinary and unaccountable is this habit, that I have sometimes thought it might not be general among the whole of this species in every situation; that the extreme heat of our summers, though suitable enough for their young, might be too much for the comfortable residence of the parents; that, therefore, on their way to the north, through our climate, they were induced to secure suitable places for their progeny; and that, in the regions where they more generally pass the summer, they might, perhaps, build nests for themselves, and rear their own young, like every other species around them. On the other hand, when I consider that many of them tarry here so late as the middle of June, dropping their eggs, from time to time, into every convenient receptacle; that in the states of Virginia, Maryland, Delaware, New-Jersey, and Pennsylvania, they uniformly

retain the same habits; and, in short, that in all these places I have never yet seen or heard of their nest: reasoning from these facts, I think I may safely conclude that they never build one; and that in those remote northern regions their manners are the same as we find them here.

"What reason nature may have for this extraordinary deviation from her general practice, is, I confess, altogether beyond my comprehension. There is nothing singular to be observed in the anatomical structure of the bird that would seem to prevent or render it incapable of incubation. The extreme heat of our climate is probably one reason why, in the months of July and August, they are rarely to be seen here. Yet we have many other migratory birds that regularly pass through Pennsylvania to the north, leaving a few residents behind them; who, without exception, build their own nests and rear their own young. This part of the country also abounds with suitable food, such as they usually subsist on. Many conjectures indeed might be formed as to the probable cause; but all of them, that have occurred to me, are unsatisfactory and inconsistent. Future, and more numerous observations, made with care, particularly in those countries where they most usually pass the summer, may throw more light on this matter; till then we can only rest satisfied with the reality of the fact. This species winter regularly in the lower parts of North and South-Carolina and Georgia. I have also met with them near Williamsburgh, and in several other parts of Virginia. In January, 1809, I observed strings of them for sale in the market of Charleston, South-Carolina. They often frequent corn and rice fields, in company with their cousins, as Mr. Bartram calls them, the red-winged black-birds; but are more commonly found accompanying the cattle, feeding on the seeds, worms, &c. which they pick up amongst the fodder, and from the excrements of the cattle, which they scratch for this purpose. Hence they have pretty generally obtained the name of cowpen-birds, cow-birds, or cow-blackbirds. By the naturalists of Europe they have hitherto been classed with the finches; though improperly, as they have no family resemblance to that tribe sufficient to justify that arrangement. If we are to be directed by the conformation of their bill, nostrils, tongue, and claws, we cannot hesitate a moment in classing them with the red-winged blackbirds, Oriolus Phœnicieus; not, however, as *orioles*, but as *bunt-*

ings, or some new intermediate genus. The notes or dialect of the cow-bunting, and those of the red-wings, as well as some other peculiarities of voice and gesticulation, are strikingly similar."

The letter from Dr. Potter, of Baltimore, to the author, contains many original observations on this peculiar bird, and exhibits the taste and accuracy of a true disciple of nature.

The *lanius tyrannus*, king-bird, or tyrant fly-catcher, of our orchards, not only calls forth the exercise of our author's abilities in prose, but becomes a subject of his celebration in verse. It would be no less agreeable to ourselves than to those who honour our pages with a perusal, to copy from p. 70 and seq. the beautiful poem on this active and heroic bird; but they who are desirous of seeing the flights of his muse among the feathered tribes, must gratify themselves by examining the original.

We cannot conclude our remarks without an expression of our earnest desire of being gratified with the next and the succeeding volumes as fast as a work of so much labour and variety will permit.

TRANSACTIONS *of the* AMERICAN PHILOSOPHICAL SOCIETY, *held at Philadelphia, for promoting Useful Knowledge. Vol. VI. Part 2. (Continued from p.* 368, *of Hex.* 3, *Vol. I. and concluded.)*

HAVING formerly noticed, as far as was consistent with our design, the astronomical, mathematical, and zoological papers, contained in this publication of our scientific brethren in Pennsylvania, we had commenced our review of the memoirs of a geological nature.

3. The next *Geological* tract relates *to the freestone quarries on the Potomac and Rappahannock rivers. By B. Henry Latrobe.* In the 4th vol. of the society's transactions is contained a memoir by Mr. L. concerning the sand hills in the maritime parts of Virginia. The present is a sequel of the former. Its object is to describe the freestone strata, lying between the two northern rivers of Virginia, from which the stone is taken for constructing the capitol and the president's house at the City of Washington. The

range of sand-stone rocks, in which these quarries are opened, was, in Mr. L.'s opinion, the ancient sea coast, bounded by sand-hills like the present; and he has not a doubt that a full and candid examination of the facts will work conviction in every mind. This stone, of which the public buildings at the seat of the national government are composed, is worthy of additional consideration on that account. It is brought from the neighbourhood of Aquia-Creek, and is thus described:

"The component parts of the stone are,

"*Sand*, generally sharp, but often rounded by attrition, of variously sized grains, from very coarse to extremely fine.—This forms the mass and body of the stone:—in this sand is found a variety of extraneous matters.

"*Clay*, in nodules, generally round, sometimes, but rarely, stratified as if deposited. The clay is white and remarkably pure. The clay-holes are very troublesome to the stone-cutter, and diminish the value of these quarries exceedingly. They are found from the size of a pea, to many inches in diameter.

"*Pebbles*, large and small, of quartz, sand-stone, granite, whin, rounded by attrition, and amorphous lumps of quartz.

"*Pyrites*, or lumps of marsh mud mixed with sulphat, or sulphuret of iron, effloresing in the air. Often, when one of these pyrites happens to be concealed near the surface of a wrought stone, so that the air and water may reach it, it swells and bursts the stone, thereby defacing the work. This is another disadvantage in using it.

"*Nodules of iron ore in sand.*—These nodules dissolve in the air and water, and stain the stone disagreeably. In a spherical hole of the stone, I once found a nest of very beautiful parallelopipedal crystals, quite transparent. I had no opportunity of examining them chemically.

"*Wood*, from trunks and branches of trees of large size, to small twigs, either entirely carbonated, or the wood carbonated, and the bark in a fibrous state, so as to have the appearance of a net, and a considerable degree of tenacity; or the bark fibrous, and the wood in a state quite friable; or the wood replaced by pyrites, which effloresce in the air;* or in *cavities*, the sides of which have the impres-

* I had a piece of this ſpecies of pyrites, in appearance the branch of a tree, with a ſmall twig attached to it; about 3 inches long, and 3-4 of an inch dia-

sion of branches, in minute ramification, and are lined with a pellucid crust, probably calcareous spar. This latter evidence of the admixture of wood, is to be found chiefly near Fredericksburg.

Iron, appearing in stains, either of masses, or in dark ferruginous spots and clouds; and *clay*, infused through the whole mass, with probably an infusion of lime, which appears to be the cement by which the sand particles are held together; for the acids indicate no existence of carbonate of lime, and I have not yet been able to submit the stone to any chemical examination.

Native alum, is found on the lower projecting surfaces of the rocks, where they are in wet situations, probably produced by the sulphur of the pyrites combining with the clay of aggregation.

" The colour of the stone varies from white to a dark rusty tint. Herewith I present to the Society two blocks, the one of the whitest, the other of the darkest tint. The dark block was, when cut, of a rusty brown; but wishing to weigh the stone in its driest state, I placed it on the plate of an iron stove. In a quarter of an hour its colour was changed almost to black.

" The degree of hardness is very various. When moderately hard, its fracture is rough and irregular; when very hard, concave and even; when breathed upon, it has a strong earthy, and somewhat hepatic smell.

" The specific gravity of the stone is as various as its colour and texture. The two blocks herewith presented, are very accurately four inches square, and two inches thick. They weigh as follows:

" The brown block 2lb. 6.69oz. Avoird.
white block 2 3.96
———— .... difference 2.73oz.

" 54 of these blocks make a cube foot; therefore the difference of weight in one cube foot, between the white and brown stone would be, 9lb. 3.42oz.

" The white block absorbed in 24 hours, of river water, 6.25oz. or at the rate of upwards of 21lb. per cubic foot.

meter, very hard and heavy. I carried it in my pocket for a fortnight, and then threw it into a small box in my office, containing drawing instruments. It remained there for two years; but last summer, during very damp and hot weather, it effloresced, and fell into powder, corroding and injuring my instruments exceedingly.

" One of the most remarkable circumstances belonging to this stone, is the arrangement of the particles of sand of which it consists. In whatever direction a block is cut, the successive accumulations or strata, which may be easily distinguished by the different size of the grains, their colour, the admixture with other substances, and their *individual* parallelism, appear not to lie in beds parallel to each other, but in masses bounded by wavy lines; or which are suddenly cut off by other masses, the lines of which wave in another direction; and this appearance is such, that many stones exhibit by the lines of their strata, a good representation of the wavy hills of the sand coast, as will be seen by reference to the plate in the fourth volume of the Transactions of the Society.

" This mode of stratification appears to me to be an incontestible proof, that the wind has been the agent of accumulations of the sand of which the stone consists, as it is now of the sand hills of our present coast. For if it could be supposed, that the agitation of the surf, or of the whirls which occur in all water running through an interrupted course, could have caused this appearance, it would have occurred, as in cases where there is no doubt of aqueous deposition, that the stone would have separated more easily at the lines of stratification than elsewhere. But such is not the case in this stone, for it is as solid at the lines separating the strata as elsewhere.

" As the difference of granulation is exceedingly various, often within a very small space, so is also the cohesion of the stone very uncertain. Often with the fairest prospect of a hard sound mass of rock, of great depth and thickness, the quarrier suddenly strikes into a mere friable sand-bank. Quarrying is therefore a lottery, in which the blanks are often more numerous than the prizes.

" The quality of the stone, as a building material, is also in other respects various. Of the stone most even in its grain and texture, most pleasant to work, and of the most durable appearance, a great part cracks and falls to pieces, on exposure to the sun and air, especially if rapidly dried, after being taken from the quarry. Sometimes, contrary to all expectation, the frost tears it to pieces.—All of it expands when wet, and contracts when drying. This property it seems never to lose. When buried in the walls of a heavy building, it is controuled by the incumbent weight,

but those blocks that are more at liberty, either at one or both ends, are subject to this variation of size; and the joints of the work open and shut, according to the dryness or humidity of the weather. Window and door selles, therefore, which are confined at both ends, and free in the middle, generally break, and the fissure opens and shuts alternately, to the amount, when open, of one tenth of an inch in a block of six feet.

"Below the freestone is found, on the *Potomac*, most frequently loose sand, sometimes a stratum of round gravel or pebbles,—seldom clay,—very often loose stone very full of carbonated wood:—on the *Rappahannock*, loam, marsh mud, quicksand, clay and dry sand:—and *near Mansfield*, below Fredericksburg, the largest mass of timber which I have yet seen:—on *James's river*, sand, gravel, loam. The wood mixed with the stone on James's river, is, I think, less carbonated than on the Rappahannock and Potomac.—The superstrata are, generally, soft clay, loam, and tolerably pure clay, in a state of excessive compactness. On the level country, light loamy sand, and on the slopes of the valleys, *the line of sea beach* above mentioned, often washed and spread over the declivity, often in heaps and ridges. But it will be observed by any traveller, that neither in the bottoms of valleys, out of the beds of the present rivers, nor on the tops of the levels, is gravel to be found."

On the whole, Mr. L. is of opinion that, as at Cape-Henry in these days, the sand has been blown from the margin of the sea inland; that it soon formed a ridge or knoll of moveable sand along the shore, above high water mark, covering the old surface of the earth, with all its vegetable productions, and that, in the course of time not very distant, it accumulated into hills, and buried and overwhelmed whole forests in its progress. Its surface, before induration, constantly changed with the action of the wind. The mass of sand, therefore, contained broken boughs, twigs, and trunks of trees, different forms and quantities of iron, and all other extraneous substances, blown up from the ocean by storms, as clay and mud, mixed with sea-water, when a tremendous and muddy surf is driven ashore and through the air, by violent tempests. If, therefore, it be supposed that, by any operation of nature, these sand-hills from a loose state, were to be hardened and consolidated,

the strata of rock so formed would perfectly resemble the layers which appear in the present quarries. These considerations, therefore, impress the belief that both masses are of the same origin. We hope Mr. L. will continue his instructive researches.

4. *Observations to serve for a mineralogical map of the state of Maryland. By Mons. Godon.* It is stated herein, by this acute mineralogist, that all the region extending from Baltimore-Bay to Washington-City is alluvial; the soil consisting chiefly of *quartzose sand*, variously coloured by *iron*, and interspersed with *mica*, to which is added a small proportion of *aluminous earth*. Beneath this stratum lies a bed of quartzose white stones; and lower still, a thin layer of ferruginous sand-stone. The primitive rocks he notices are the *gneiss* and *amphibolic* rocks on the Potomac, near Georgetown, abounding in *magnetical pyrites*, and those which form the valley through which the Patapsco flows, near Baltimore. This is a good sketch, by an able hand. We wish it was more general and extensive. All the lovers of science are interested in the continuance of Mr. G.'s labours.

5. *Observations on the Geology of the United States, explanatory of a geological map. By William M'Clure.* This is the performance of which we gave some account in our Hex. 2, vol. vi. p. 295; and from which we anticipated something enlarged and excellent, both as respected the ability of Mr. M. and the great advantages of his situation. Nor are we disappointed: he is a zealous Neptunian, and a firm disciple of the Wernerian school; and he has convinced himself, by an extensive survey of our country, that the United States afford a most correct elucidation of that theory, as relates to the position of the different series of rocks. This is indeed an important addition to our geology. The *alluvial* materials of these States are deposited along the sea coast, from the east end of Long-Island to Florida, thence westward to Natchez, occupying all the region from about the 32d degree of north latitude to the gulf of Mexico, and thence again northward, on both sides of the Mississippi, to the vicinity of the falls of St. Anthony, or at least some distance above the Missouri and Illinois rivers. Westward and northward of this lies the collection of *primitive rocks*, and their accompaniments. This is delineated from Penobscot in the N.E. to Hawkins's settlement on the

Flint-River in the south-west. They are bounded chiefly by the ocean along the coast of Maine, New-Hampshire, Massachusetts, and Connecticut. The primitive materials on the north side of Long-Island are contiguous to the alluvial on the south. They are limited in New-England, westwardly by the Green Mountains in Vermont, by the Taconic in New-York, and by the Highland chain, crossing the Hudson from Dutchess county to Orange, between West-Point and New-Cornwall. To the south of New-York, they, with a few exceptions, border on the alluvial country, and stretch along by Trenton, Baltimore, Washington, Richmond, Columbia, Augusta, &c. On the N.W. it reaches to within ten or fifteen miles east of Eastown, on the Delaware, three miles east of Reading on the Schuylkill, and a little west of Middletown, on the Susquehannah, where it joins the Blue Ridge, and continues along it to the Maggotty Gap; from thence to four miles east of the lead mines of Austinville, and following a south-western direction, by the stony and iron mountains, six miles S. E. of the warm springs in Buncomb county, North-Carolina, to the eastward of Hightown, on the Coosa river, and a little to the westward of the Tallapousa river, it meets the alluvial stratification near the Alabama, which runs into the bay of Mexico at Mobile.

Back of this is found the *transition* formation, running in a comparatively narrow stripe, or layer, from a point a little to the eastward of Lake Champlain, in a S. W. direction, almost to the banks of the Tombigbee, in the Mississippi Territory. The curiosity and importance of this part of Mr. M.'s memoir incline us to extract it entire.

"TRANSITION FORMATION.

"This extensive field of transition rocks, is limited on the S. E. side from a little to the eastward of lake Champlain, to near the river Alabama, by the N. W. boundary prescribed to the primitive rocks; on the N. W. side it touches the S. E. edge of the great secondary formations, in a line, that passes considerably to the westward of the dividing ridge, in Georgia, North-Carolina, and part of Virginia, and runs near it in the northern parts of that State, and to the eastward of it in the States of Pennsylvania and New-York.

"This line of demarkation runs between the Alabama and Tombigbee rivers, to the westward of the north fork of the Holston river, until it joins the Alleghany mountains near the sulphur springs, along that dividing ridge to Bedford county, in Pennsylvania, and from thence N. E. to the east side of the Catskill mountains on Hudson's river. This line of separation of the transition and secondary formations, is not so regularly and distinctly traced as in the other formations. Many large valleys are formed of horizontal secondary limestone, full of shells, while the ridges on each side consist of transition rocks, &c.; the two formations interlock, and are mixed, in many places, so as to require much time and attention to reduce them to their regular and proper limits. It is however probable, that to the N. W. of the line here described, little or no transition will be found, although to the S. E. of it, partial formations of secondary may occur.

"The breadth of this transition formation is generally from 20 to 40 miles, and the stratification runs from a north and south to a north-east and south-west direction, dipping generally to the N. W. at an angle, in most places, under 45 degrees from the horizon. On the edge of the primitive, it, in some places, deviates from this general rule, and dips, for a short distance, to the south-east. The most elevated ground is on the confines of North-Carolina, and Georgia, along the S. E. limits to Maggotty Gap, descending towards the N. W. until it meets the secondary; from Maggotty Gap, north easterly, the highest ground is on the north-west side, sloping gradually towards the primitive, which ranges along its south-east boundary.

"The outline of the mountains of this formation, is almost a straight line, with few interruptions, bounding long parallel ridges of nearly the same height, declining gently towards the side, where the stratification dips from the horizon, and more precipitous on the opposite side, where the edge of the strata comes to the surface.

"This formation is composed of a small-grained transition limestone, of all the shades of colour from white to dark blue, and in some places it is red, intimately mixed with grains of *grey wacke slate*, also of *lime spar* in veins, and disseminated; *siliceous flinty* veins and irregular masses; in many places there is an intimate mixture of small sand, so as to put on the appearance of *dolomite*;

this is in beds from 50 to 5000 feet in width; it alternates with *grey wacke*, and *grey wacke slate*, a siliceous aggregate, having particles of a light blue colour, from the size of a pin-head to that of an egg, disseminated, in some places, in a cement of a slaty texture, and in others in a quartz cement; a fine sandstone cemented with quartz in large masses, often of a slaty structure, with small detached scales of *mica* intervening, and a great variety of other rocks, not described or named by any author, which, from their composition and situation, cannot be classed but with the transition.

"The limestone, *grey wacke*, and *grey wacke slate*, generally occupy the valleys; the quartzose aggregates the ridges; amongst which is that called the *millstone grit;* this must not be confounded with another rock, likewise denominated the *millstone grit*, which is a *small grained granite*, with much quartz, found in the primitive formation; there are many and extensive caves in the limestone of this formation, where the bones of many animals are found, as well as the remains of marine insects and shells.

"Beds of *coal-blende*, accompanied by *alum slate* and *black chalk*, have been discovered in this formation on Rhode-Island; the Lehigh and Susquehannah rivers; (a large body of *alum slate*, which occurs on Jackson's river in Virginia, is perhaps only a part of a similar formation;) *powerful* veins of the *sulphate* of *barytes* cross it, in many places it is granular, as that near Fincastle; or slaty, as in Buncomb county, North-Carolina.

"*Iron* and *lead* have as yet been the principal metals found in this formation; the *lead* in the form of *galena*, in clusters, or what the Germans call *stock-werck*, as at the lead-mines on New-River, Wythe county, Virginia; the *iron* is disseminated in the form of pyrites; hematitic and *magnetic iron ores*, and considerable quantities of the *sparry iron ore* occur in beds, and they are likewise disseminated in the limestone."

In addition to which, it ought to be noted that the *primitive* is covered by *transition* materials, the whole distance from Boston to Rhode-Island.

The secondary strata, or flætz-rocks, occupy great extent in the United States and their dependencies. Mr. M. marks the middle of Connecticut, from Hartford to the

sound at New-Haven, as *secondary*. This tract reaches to a considerable width on both sides of Connecticut river. It recommences to the W. and S. W. of New-York city, and traverses New-Jersey from Newark and Amboy to Trenton, forming a belt partly between the primitive and transition strata, and partly on the back of the primitive strata themselves, extending from the Hudson to the Delaware, and beyond, as far as the river Rappahannock. To the north-westward of the mountains and ridges, these secondary strata occupy a very large extent of country, reaching from Lakes Ontario, Erie, and Michigan, almost to the boundary of West-Florida, and from the Alleghany chain nearly to the alluvial deposit east of the river Mississippi.

A map accompanies this memoir, or rather the memoir is a document explanatory of the map. On this the alluvial region is coloured with yellow, the primitive with brown, the transition with pink, and the secondary with blue; while the district in which marine salt predominates is designated by green. By this happy expedient the whole configuration is brought before the eye in one broad view, and the entire geology of North-America, at least as far as it is known, is displayed in a single chart. The beholder becomes satisfied that nature works in these parts upon a vast plan, and from the fewness of igneous minerals he acquires a strong and uniform body of evidence in favour of the aqueous theory of these configurations. To this bold and instructive delineation the geologist will resort, and while he contemplates, with approbation, how much Mr. M. has accomplished, will be ready to amend any errors he may have committed, and to supply whatever defects may have escaped him. Thus, by a combination of efforts, the business of forming a correct geological system for the section of the globe which our nation occupies, will rapidly progress, and in a moderate time be brought to a point of excellence, of which no country can afford an example. Much praise is due to this enterprising and intelligent gentleman for his activity and exertions; and we think all the Neptunians here, and elsewhere, will thank him for the treat he has afforded them. We felicitate Professor Werner in having so able a disciple; and can truly add, that it would eminently delight us to accompany the illustrious couple on a tour from New-York to Niagara, and hear their observations, especially those of the former, upon the grand and di-

versified geological topics which would present themselves on the journey. The verifications of his system, which the venerable German would behold, could not fail to excite in him sentiments of the most exquisite delight.

V. The class of papers which next present themselves are those on METEOROLOGY. These are four in number. The first relates to the origin and composition of meteoric stones, which fell from the atmosphere, in the county of Fairfield, state of Connecticut, on the 14th December, 1807, in a letter from Benjamin Silliman, professor of chemistry in Yale-College, and Mr. James L. Kingsley. This is the memoir we gave in our Hex. 2, vol. v. p. 202, in a revised, corrected, and somewhat enlarged form. 2. Since that time, however, this singular and surprising production has been analyzed, and the details of the analysis are subjoined to the original memoir, in the form of a distinct communication. By this investigation it appears that this stone consisted of 51.5 of silex, attractable brown oxyd of iron 38, magnesia 13, oxyd of nickel 1.5, and of sulphur 1. 3. Extract from a paper on meteoric stones, written by F. R. Hassler, Esq. mathematical professor in the military school at West-Point. This very scientific writer examines the question, whether the power exerted by any lunar volcano can be sufficient to throw a heavy body beyond the sphere of its predominant attraction, and of course to enter that of the earth? and he seems inclined to answer the query in the negative. This conclusion is undoubtedly correct; and when the considerations exhibited in p. 263 of our last volume are taken into view, there will be conclusive evidence of the formation of these mineral compounds in the atmosphere, from an aggregation of their particles there, and that there is no need whatever to derive them from volcanoes of any kind either lunar or terrestrial. 4. The last tract of this class recites some facts concerning a great cold in January 1807, at the town of Hallowell, in the District of Maine, on Kennebec river, by a member of the society. The quicksilver fell, in Fahrenheit's scale, to 36° or 37° below zero, by natural cold, in the latitude of 44° 16′ N.; during all which the male and female inhabitants were driving about on pleasure and business as usual.

VI. On MINERALOGY. On this branch of science, there is an account of experiments made on *Palladium*, found in combination with pure gold; by Joseph Cloud, an officer

in the mint of the U. S. His experiments and remarks are too remarkable to be given in a summary; we therefore give his words at large:

"Notwithstanding the numerous experiments that have been made by several eminent chemists, on a metallic substance, discovered by Doctor Wollaston, in combination with crude platinum, and by him called palladium; there still remains much doubt with respect to the existence of such a simple substance. Professor Murray, one of the latest writers on chemistry, in speaking of palladium, and other metals found in combination with crude platinum, says, "It is not impossible that they may be alloys of others; or that the peculiar properties which they appear to exhibit, may arise from combinations which analysis has not detected. The peculiarity of their association in one natural production, while there are no traces of them in any other, perhaps lends force to this supposition." It has been my fortune, however, to obtain it from a different source; which enables me to point out some of its characters, that will throw such light on the subject, as to remove all doubts respecting the existence of this simple metal.

"On the 15th of May, 1807, a deposit of gold bullion, from Brazil, in South America, was made at the Mint of the United States, weighing 797 ounces, 4 dwts. gross, equal to 819 oz. 11 dwts. 11 grs. standard. It was composed of about 120 small ingots, differing in weight; each of them was stamped on one side with the arms of Portugal, and the inscription of "Rio das Mortes." The other side was stamped with a globe. They were also marked with their respective qualities. Among them were two or three ingots, so remarkably different in colour from any of the common native alloys of gold, that I was induced to reserve one, weighing 3 ounces, 11 dwts. 12 grains, for examination, and which was subjected to the following experiments.

"Experiment 1st. A portion of the reserved bar was examined for silver, by solution in the nitro-muriatic acid; but no trace of that metal was indicated.

"Exp. 2d. 24 carats of this bar were combined with 48 carats of fine silver, and cupeled with pure lead, for the purpose of destroying any of the base metals that might be in combination; but there was no loss of weight produced: consequently, there were none of the easily-oxidable metals in the compound.

" Exp. 3d. The pure metals, from experiment 2d, were reduced to a thin lamina by rollers, and subjected to the action of pure nitric acid: the silver, together with the native alloy of the gold, were dissolved by the acid, which was tinged of a high brownish-red colour. The metals remaining undissolved, after being well washed with pure water, and ignited, weighed 22 carats 1 1-2 grain; and had every appearance of pure gold.

" Exp. 4th. The metals remaining undissolved in the last experiment, were submitted to the action of nitro-muriatic acid. The whole was dissolved, except a small portion of silver that had escaped the action of the nitric acid: the solution was tested for platinum, by muriate of ammoniac and other re-agents, without any indications of the presence of that metal. The gold was precipitated, and found to have been pure to $\frac{1}{184}$ part.

" Exp. 5th. To the metallic solution from experiment 3d, I added some pure muriatic acid, until the silver was precipitated, and the acid was in considerable excess: there was no precipitation of the colouring matter of the solution, which still retained its red colour, and did not appear to have undergone any change by the precipitation of the silver.

" By these preliminary experiments I discovered, that the alloy was a compound of gold, and a metal that would resist the cupel, and was soluble in the nitric and nitro-muriatic acids. I therefore adopted the following mode of analysis, as the easiest, and at the same time a satisfactory evidence of the existence of a metal possessing the properties of palladium; by which name I shall call it in future.

" Process 1st. The whole ingot was combined with double its weight of fine silver, and cupeled with a quantity of lead, equal to the weight of the compound.

" Pro. 2d. The cupeled metals were reduced to thin plates, and submitted to the action of boiling nitric acid, until the silver and palladium were dissolved. The solution, which was of a high brownish-red colour, was decanted, and the residual gold washed with pure water, which was added to the decanted solution.

" Pro. 3d. Pure muriatic acid was added to the metallic solution of process 2d, until no further precipitation took place, and the acid was in excess. The silver being com-

pletely precipitated, the fluid, which retained its red colour, was decanted; and the precipitate washed with pure water: the washings were added to the decanted fluid, now holding nothing but palladium in solution.

" Pro. 4th. A saturated solution of pure potash (carbonate of potash did not succeed so well, part of the palladium being held in solution by the carbonic acid) was added to the metallic solution from process 3d, until the whole of the palladium was thrown down in form of a flocculent orange-coloured precipitate. The precipitate was collected on a filtre;—was well washed with pure water, and dried.

" Pro. 5th. A portion of the precipitate from the last process was put into a crucible, without addition, and subjected to a heat of about 60° of Wedgewood; and thus, a metallic button of palladium was obtained.

" Pro. 6th. Another portion of the precipitate from process 4th was combined with black flux, and submitted to a degree of heat equal to that excited in process 5th, and similar results were obtained.

" Having thus obtained a metal, which I supposed to be palladium, from a source heretofore unknown, in order still farther to satisfy myself, I separated that metal from crude platinum, and subjected them both to a number of comparative experiments, with prussiate of mercury, recent muriate of tin, and other re-agents, without discovering the least shade of difference.

" Palladium is of a greyish-white colour; so closely resembling that of platinum, that they cannot be distinguished by their complexion. It is malleable, and very ductile; so that by the rolling-mill it can be reduced into thin plates. In hardness it is nearly equal to wrought iron. Its specific gravity, at 64° Fahrenheit, is $11\frac{4}{99}$. It may be alloyed with a number of the metals. With gold, silver, and platinum, it forms ductile alloys, and very much debases the colour of the two former.

" It would be useless here to go into a further detail of the characters and properties of palladium, as Doctor Wollaston and Mr. Chenevix have fully explained them, in the Philosophical Transactions of the Royal Society of London, for 1803-4 and 5. It is enough for me to have shown, I trust satisfactorily, that palladium has a real existence; that it is one of the pure or inoxidable metals;

and, in this respect, on a par with gold, silver, and platinum; and that it has been found in a native combination with gold, without the presence of platinum, or any other metal.

"Gold has never been found pure in nature; it has hitherto always been found alloyed with silver or copper; mostly a combination of both, and frequently other metals. The gold which was the subject of my experiments, appears to have been alloyed with palladium only; if any of the other known metals had been present, except silver and platinum, they would have been indicated by preliminary experiment 2d.—Silver would have been discovered by experiment 1st; and platinum by experiment 4th. It is self-evident, that this alloy was *native;* for no man would have been at the trouble and expense to purify the gold, and separate the palladium from platinum, the only source from whence the palladium had been heretofore obtained; and where it exists only (agreeably to Doctor Wollaston's experiments, confirmed by my own,) in the proportion of one half of one per cent. merely for the purpose of combining them with an intention of fraud; as none of the metals injures the colour of gold so much, and renders it so suspicious as palladium; and which would necessarily lead to a detection of the imposition. If fraud, therefore, had been intended, platinum would have answered the purpose much better, as it is not separated from gold by the usual process of assaying."

VII. On Civil Engineering. 1. A letter from Capt. Wm. Jones, of Philadelphia, communicating sundry queries, proposed by him to William Jones, Esq. civil engineer at Calcutta, relative to the principles and practice of building in India, with his answers to the same. 2. Observations on the foregoing communication by B. Henry Latrobe, surveyor of the public buildings of the United States, &c. But after so full and extensive a display of the contents of the present publication, we decline entering into the merits of these two economical treatises, but leave them to be consulted in the original by the lovers of architecture.

The American New Dispensatory, &c. By JAMES THACHER, *A. A. and M. S. S.* 8vo.—Boston—Wait and Co.—1810—pp. 529.

OUR readers will recollect that we attempted (Hex. 3, vol. I. page 177,) to give a brief historical account of the origin, early character, and progressive improvements of Dispensatories and Pharmacopœias. We noticed the rudeness of the first essays towards this object, corresponding with the infantile state of medicine; the slowness of the steps by which they advanced to a more respectable condition; the circumstances which successively rendered them incompetent, and demanded a reform; their assumption of a scientific character, under the guidance of a more enlightened chemistry; and finally, the causes of the prodigious multiplication of publications of this kind in modern times. In every age and country we find them an exact index of the state of medical knowledge, and thereby presenting to the medical historian the means of filling up chasms in the deduction of his narrative, which are not to be readily found elsewhere.

It is one of the numerous proofs of the progress of medicine in the United States, that books of this kind are beginning to issue from American presses. And so far as they serve the purpose of embodying and circulating the improvements which are progressively taking place in the American Materia Medica, or of exciting the authors of such improvements to additional exertions, they must be allowed, on all hands, to lead to beneficial results.

We cannot give a better account of the general plan of this work than what is contained in the preface, which we therefore quote entire, for the satisfaction of the reader.

"Such has been the series of improvements in Chemical Science for the last thirty years, that Dispensatories and Pharmacopœias have in constant succession been superseded and rendered obsolete. Those gentlemen, therefore, whose education is not of modern date, are subjected to the alternative, either of making continual accessions to their libraries, or of treating with disrespect the prevailing systems of the day. Medical students seldom have leisure to search the pages of numerous volumes on the subject; and there is much reason to apprehend, that candi-

dates frequently commence their professional duties under circumstances extremely inauspicious as respects this branch of education. The mutual duties, therefore, both of the medical instructer and the student, might be facilitated by a standard work, exhibiting in familiar language, and in a concentrated form, the principles of modern Pharmacy, as well as those of Chemistry and Materia Medica, to which it is so closely allied.

"European Dispensatories, it will be conceded, are not well suited to the views and purposes of American physicians: they still contain in their catalogues many antiquated substances and Pharmaceutical preparations, whose medical powers are found by experience to be too trivial to entitle them to consideration; while some valuable remedies employed in this country have not been introduced. The Epitome of Chemistry, and a variety of tables, plates, &c. with the Pharmaceutic apparatus, occupying nearly one hundred and fifty pages in Dr. Duncan's Dispensatory, are altogether omitted in this work; and the more concise and perhaps no less judicious "General Principles of Pharmaceutic Chemistry" of Mr. Murray, are substituted. Under the head of Preparation and Compositions, the analogous officinals of the three British Pharmacopœias, are inserted in his Dispensatory; and in some instances the different processes of each are particularly described. These, although of utility in a scientific view, are not to be considered as indispensable to American practitioners in general; nor do they comport with the plan here prescribed.

"The Pharmacopœia of the Massachusetts Medical Society, it will be confessed, is not inferior in point of merit to any other. It contains an ample and judicious selection of medicinal substances and preparations; but, being intended merely as a standard of uniformity, the natural history, chemical properties, and medicinal virtues of natural and artificial substances, and their application as remedies, not being appropriate subjects, were inadmissable in such a work. Indeed, since the appearance of that production, the expediency of a concise compilation adapted to our own practical use, has become more evident; and from the desire of co-operating with the views of the Massachusetts Medical Society, their Pharmacopœia is adopted as the basis of this work, and its nomenclature and order of arrangement are strictly followed throughout.

"It is, however, to be considered in the character of a compilation only; and when other than the language of the original is substituted, it is with the view of condensing the subject. The general principles of Pharmaceutic Chemistry, general analysis of the articles of Materia Medica, and classification of Medicine, taken from Murray's Elements, will be found to enrich the first part of this volume. With respect to the natural history, chemical composition, and properties of medicinal substances, both Duncan and Murray, together with the American Dispensatory by Dr. Coxe, have been carefully consulted, and the same respectable and well established authorities have been the sources resorted to for information relative to officinal preparations and compositions.

"The munificence of Providence is so amply displayed in our country, that it may not be deemed too enthusiastic to anticipate the happy period, when, by the associated labours of medical men, our Materia Medica shall be copiously furnished from the three kingdoms of nature, with such materials, as will derive additional value from the consideration of their domestic origin, and the facility with which they may be procured. Several indigenous substances, not to be found in any other Dispensatory, have, on this occasion, received proper attention, and their respective characters delineated under all the advantages which the most unexceptionable sources of information could afford. Professor Barton, whose authority is held in universal respect, furnishes in his valuable collection for a Materia Medica of the United States, the requisite information relative to most of these productions. On some occasions the compiler has had recourse to that excellent publication, the Domestic Encyclopedia, edited by Dr. Mease, and also the communications to be found in the several volumes of the Medical Repository of New York.

"In other instances, where important information respecting medicinal substances has been announced by American physicians, or otherwise found floating on the surface of science, he has not failed to collect, and incorporate into the general mass.

"To the Rev. Dr. Cutler acknowledgments are due for his botanical account of indigenous vegetables,* in which

* Vid. Memoirs of the American Academy of Arts and Sciences, vol. I.

are described some productions that have hitherto escaped the investigation of other writers, and we are induced to hope, that, from the more extended researches of this respectable botanist, the public will derive advantages still more considerable.

"Although the appendix augments the size and price of the volume, its contents will be found to afford the reader ample compensation. Indeed, the advantages derived from access to public and private libraries, and an extensive correspondence, have been accompanied with a diligent and zealous application to the subject, and a constant endeavour to compress in this volume an unusual mass of well authenticated medical facts, embracing objects of solid and practical utility."

The arrangement of the body of this work is so entirely conformable to what obtains in the generality of similar ones, that we shall not detain the reader with any particular account of it.

The appendix consists of a number of detached parts, which we shall enumerate in the order in which they stand. The first relates to the objects and rules of prescribing; the second, to the nature and medicinal uses of the gases, comprising an account of oxygen gas, nitrous oxyd gas, hydrogen gas, carbonic acid gas, and carburetted hydrogen gas;—the third is concerning medical electricity, and states the several modes of its application, as well as the diseases in which it has been found to be useful; the fourth treats of Galvanism, under similar views; the fifth, offers an abridgment of Dr. Currie's *Medical Reports on the use of Water,* as contained in both volumes of his celebrated work, together with the general principles and rules of warm and cold bathing; and the sixth, relates to the cultivation of the Papaver Somniferum, and the method of preparing Opium.

We consider this work as entitled to much respect and commendation. While the author, with modesty and ingenuousness, speaks of it as a compilation only, we must do him the justice to observe, that it appears to us to be a compilation executed with much diligence of research, and much care and judiciousness of selection. And it will afford us pleasure to see him reaping the reward of his exertions in the general circulation and respectful estimate

of this Dispensatory among the discerning and liberal members of the profession.

MEMOIRS *of the* PHILADELPHIA SOCIETY *for promoting* AGRICULTURE; *containing Communications on various Subjects in Husbandry and Rural Affairs, &c. &c.* Vol. I. Philad. 8vo. Aitken—pp. 331.—*To which is added a statistical account of the Schuylkill permanent Bridge.*

THE Agricultural Societies of New-York and Massachusetts have already furnished materials for our work. We are glad to receive something of the same kind from the Pennsylvania Association. Though this was not published so soon as the others, but seems to have been "long choosing, and beginning late," yet it has given us a bulky and handsome volume.

The principal contributors to the collection, are Judge Peters, Doctor Mease, Professor Rush, Mr. Cooper, and John Taylor, Esq. To Mr. Peters, the reader feels himself indebted for the following essays, to wit: 1. *A Memoir on "hoven" cattle.* This is a disease to which horned beasts are particularly liable, from feeding too greedily on clover grass, in its green state, while wet with dew or rain. Horses, swine and sheep, are sometimes subject to it. He supposes the disease to be produced by gases formed from succulent food, within the intestines. The malady is not confined to clover; for lucerne, pea-vine, green maize, and buckwheat, have each afforded air enough to cause, by their expansion, this mortal disorder. To relieve the paunch and guts from the distension they suffer, it is recommended to stab the animal immediately on the left side, between the hind rib and the hip-bone, with a knife. The stabbing may be repeated to the seventh time, and succeed at last. The wounds must not be sewed up, but left to nature. 2. *On Peach-trees.* These had been observed to be short lived in his neighbourhood. He relates his failures in many ways to prolong their lives. Though the *aphis* is one of their great enemies, he considers their most common destroyer to be a worm or grub, deposited by a wasp in the soft bark, near the surface of the ground. To prevent the ravages of this creature, he removes the

earth a few inches round the tree, in August or September. After July, the parent insect ceases to wound the bark, or to lay its eggs. He then pours around the denuded stem, beginning about a foot above the ground, a quart or more of boiling hot soap-suds or water. This kills the *ova*, without destroying the tree, and prevents the mischief of the next season. If the young trees from the nursery are infested by this voracious progeny, he plunges the roots into boiling water, before planting, and loses very few thereby.—He then treats of the "yellows" in peach-trees, as witnessed in his own peach-orchard and in that of his neighbour, Mr. Heston, and advises the eradication of those which labour under it. 3. *Departure of southern pine timber.* Mr. P. relates how one species of forest tree sometimes decays, and is succeeded by another widely different. Pitch pine has thus been succeeded by a growth of oak or hickory. White pine has sprouted up spontaneously in old fields, without any known or assignable reason for its appearance. Chesnut has been known to form a forest in succession to other kinds of trees. He considers these as proofs of changes and renovations necessary in the economy of nature. And when plants deteriorate or decline, farmers ought to take the hint, and change their course. A change of vegetables is recommended, as well as of degenerating animals. 4. *On the injurious effects of clover on orchards.* In this memoir he recites the popular notion in certain places, that the fruit of orchards was injured by the cultivation of clover in them. The opinions of Mr. Blakesley, Mr. Ives, and Mr. Chauncy, are quoted in favour of this notion; and that of Mr. Coxe, as rather questioning the correctness of it. 5. *On the yellow water of horses.* This alarming distemper in horses, he supposes to bear some resemblance to the yellow fever in man. Copious bloodletting, and purges of aloes, calomel, and cream of tartar, are the chief among his remedies, and must be promptly administered. 6. *Further remarks on peach-trees*, by himself, and Dr. James Tilton. 7. *Concerning the thickness, cement, and materials of walls, of farm and other buildings.* This piece contains many practical observations on the materials, thickness, and constitution of walls, which the seeker of information would do well to consult. 8. *On orchards.* Mr. P. and his friend, Mr. William Coxe, have detailed various experiments and

projects on the cultivation of apple-trees. 9. *Concerning coarse flour, brown bread, and the force of habit, as it relates to esculents.* Herein are various statements in favour of the wholesomeness of bread manufactured from the more ordinary materials, and an illustration of the power of custom in reconciling animals to new and artificial articles of diet. 10. *Herbage and shrubs spontaneously produced, after forest timber burnt by firing the woods.* An extraordinary growth of strawberry-plants, as successors to the pine timber that had been burned on a tract of land in Northampton county, (Pennsylvania) is described in this paper. It is intended to corroborate the doctrines maintained in the memoir No. 3, in favour of the tendency of nature to processes of extinction and renovation, without evident seeds or germs from parent plants. 11. *An essay on trench ploughing:* and 12. *On hemlock for live fences.* He recommends a plant for hedges; but does not inform his readers what is the botanical name. The term *hemlock* is too ambiguous to be distinctly understood. 13. *Remarks on a plan for a stercorary,* (with figures.) This dissertation contains valuable directions on the collection, preservation, and employment of manures. 14. *Changes of timber and plants; Races of animals extinct.* The gentleman prosecutes his favourite subject of extinction of one species, and renovation of another, by the testimony of Mr. R. Peale, Dr. C. Caldwell, and Mr. Thomas F. Leaming. The second of these witnesses avows holding the doctrine of equivocal generation, declaring that he cannot hesitate to believe, that the succeeding crop of plants is a new and spontaneous production of the farms where they appear; and that they are brought into existence by the new order or state of things introduced into the farms where they occur, by the instrumentality of clearing and cultivation. 15. *An inquiry whether gypsum is found within the United States?* Various places are enumerated wherein this valuable material is said to have been found; but he thinks there does not yet appear to be any abundant and permanent quarries of it within the United States; or at least in the more settled and populous parts thereof.

To Dr. Mease, the secretary of the society, the volume is indebted for several essays. Among these we, observe, 1. *Supplementary observations on the tendency in nature to change the productions of the same soil,* and on the propriety

of imitating this process of nature, by renewing the stock of dwindling plants and animals. 2. *Remarks on the smut of wheat, and the means of preventing it.* 3. *Facts to show the utility of blood-letting, and other evacuants, in curing the "yellow water" of horses.* 4. *An exhibition of Mr. Caleb Kirk's opinion on speltz, and the proper rural economy in cultivating it.* The quantity to be sowed on an acre is 2 or 2 1-2 bushels. It does better than wheat in flats of cold ground, as it is not so liable to freeze out in the winter. The flour is rather yellower than that of wheat, and is therefore not so fit for exportation, or even the domestic market; but it is in all respects as good for house use, and is, by many persons, preferred to wheaten flour for bread and pastry, more especially for puddings. 5. *Directions how to propagate a growth of thorns for hedges, from cuttings of the roots.*

The society owes much to Professor Rush, for his contribution to their book. This gentleman first delivered a lecture on the diseases of domestic animals, in the University of Pennsylvania, on the 2d November, 1807, at the request of the President of the Agricultural Institution; and afterwards permitted it to be printed among the memoirs. In this the attention of the public, and of farmers in particular, is called to veterinary medicine. It is, indeed, a matter both of regret and reproach, that so little is known concerning the diseases of the brute creation. Though the losses by sporadic and epizootic distempers among horses, sheep, kine, hogs, and other creatures, are often very considerable and distressing, still the facts that illustrate their disorders, the symptoms by which they are distinguishable, and the remedies best adapted to their cure, are yet but very imperfectly understood. An attention to every thing which can contribute to lessen the maladies, and consequently to increase the enjoyments and usefulness of the inferior animals auxiliary to man, is inculcated by the learned and ingenious author, with remarkable force and propriety.

The pieces under the signature of Mr. Joseph Cooper are, 1. *A short piece on the rotting of flax.* His plan is, after removing the seed, to bind the flax in bundles of about the size of rye-sheaves, and immerge them in water for about two weeks, about the end of September, or beginning of October. A pond is preferable to running water. And after having thus soaked it, the farmer is to

spread, and turn it in the open exposure to the elements, as usual. It is affirmed that so much of the gummy matter is detached by this method, that the thread and cloth are softer, and bleach more easily than in the ordinary way. 2. *On the utility of the Italian mulberry tree, and on making wine.* The writer relates what he thinks on the preparation of mulberry bark for paper; and on the making of domestic wine from indigenous grapes.

This volume also contains several tracts composed by John Taylor, Esq. 1. *On live fences.* He recommends cedar, (we suppose the common American red cedar) as a useful plant for hedges. He has already, at his farm in Caroline county, Virginia, a live fence of about six miles in length, which he supposes to contain at least sixteen thousand cedars. And his instructions are so plain, sensible and practical, that we recommend them to the perusal of every cultivator who wishes to rear live fences. [See pages 102 and 280.] 2. *A memoir on clearing land.* In this is contained the result of much experience, by an able economist and planter, in bringing land under cultivation at the cheapest rate, and in the shortest time. They who desire practical details, may find them at p. 324 and seq.

There are various respectable names and communications, which it would give us pleasure to notice, if we should not thereby be led beyond our limits. The several contributors, *Young*, *Reeve*, *Roberts*, *Coates*, *Pearson*, *Ashford* and *Dickey*, are, however, worthy of being mentioned for their respective remarks on the smut in wheat, on marl for manure, on the expenses and profits of a dairy, on improved hay-ladders, on the dimensions of American trees, on the improvement of land, on draining the same, and on the construction of a kitchen-stove.

The concluding memoir on the new Schuylkill bridge, is an admirable piece of statistical and economical composition. It does great credit to the compiler. It will be exceedingly useful to the undertakers of similar works; and will convey to future times the laudable, persevering, and successful exertions of Richard Peters, to overcome the civil, the natural, and adventitious difficulties, which impeded its erection.

To the industrious and well-directed habits of the secretary of this respectable society, we conceive the public to be chiefly indebted for the present collection; and we anticipate, and could almost venture to prophecy, that Dr. Mease will, in due time, regale his agricultural friends with another relish.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

DOMESTIC.

An Inquiry into the Use of the THYMUS GLAND; *in a letter to Dr. Edward Miller, by Benjamin Rush, M. D. Professor of the Institutes and Practice of Medicine, and of Clinical Practice, in the University of Pennsylvania.*

DEAR SIR,

I SEND you herewith, according to my promise, the opinion I have lately adopted, and taught in my lectures, on the use of the Thymus Gland.

This gland, like the spleen, is of a soft and spongy nature: it is provided with two arteries, but no secretory vessels. I have supposed it to perform the same offices for the lungs which the spleen performs for the whole body, and that is, to act as a waste-gate of undue impressions made upon the lungs; for this viscus is more exposed to be overflowed with blood than any other, in that period of life in which the thymus gland is of its greatest size in proportion to the rest of the body, that is, in infancy and childhood. This outlet, or waste-gate of undue impressions and redundant blood, is required immediately after birth, to prevent the lungs being injured by the first and violent impression of the air upon them. It is required, moreover, to defend the lungs from injury in sucking, crying, and laughing; in performing which acts, children are not provided with sufficient reason to restrain their excess. It is required still further in the diseases of the lungs to which children are exposed, particularly in catarrh and cynanche trachealis, in which they are unable to discharge (under a certain age) the matter formed by these diseases, by means of spitting. That it serves this purpose I infer from its disappearing in adult life, when it ceases to be necessary, from the cessation

or diminution of the actions and diseases that have been mentioned. Dr. Bigelow, of Massachusetts, in his inaugural dissertation submitted to the examination of the medical professors in our University, on the 19th of April last, after having adopted the opinion I am now communicating, very properly ascribes the rare occurrence of pulmonary consumption before twenty-one, to the thymus gland performing, under that period, the office I have ascribed to it. It is probably larger in women than in men, and occasionally remains through the course of their lives, only because their lungs are exposed to more frequent and powerful impressions from the blood during menstruation, pregnancy, parturition, and suckling, than they are in the male sex.

From, dear Sir,

Your sincere friend,

BENJ. RUSH.

Philadelphia, May 15, 1810.

Further Symptoms of the Revival of PHLOGISTON.

IN our vol. xiii. p. 289, we presented to our readers a summary of the Phlogistic controversy, from which it appeared that the phlogistians were rallying in great force, since their defeat by the framers of the new chemical nomenclature, in 1787.

They are yet gaining ground. But, in the struggle, a curious event has taken place. Mr. Davy, and his English followers, are to be considered as opposed to the phlogistic doctrine; while M. Gay-Lussac, and his French disciples, are supporting it. A most competent judge of these matters, Dr. George Pearson, in a letter to Dr. Mitchill, observes, that "Gay-Lussac has attacked Davy's conclusion that the alkalies are metallic oxyds; and maintains that *potassium* and *sodaium* are compounds of hydrogen and the alkalies: thereby returning to the old doctrine of phlogiston, that metals consist of a base and phlogiston. But if so, what becomes of the Lavoiserian system? This must fall. For if this doctrine be admitted, by analogy the other metals must be similarly compounded." It is probable the dispute admits of an easy accommodation, by merely considering the alkalies, &c. in their ordinary states, to

be oxyds, or combinations of metallic bases with oxygen; and by viewing them in their reduced states to be combinations of metallic bases with phlogiston, (hydrogen.) This will keep up the analogy perfectly with the other metals. It will support the doctrine of Lavoisier, as far as oxygen is concerned in changing the forms and qualities of metals. It will do more: it will confirm the doctrine of Stahl, as far as phlogiston, (hydrogen) is operative in changing and modifying their bases. It will happily reconcile the two systems, by allowing the facts that a metallic basis, by combining with oxygen, forms *an oxyd,* and by combining with phlogiston, forms what is called a *metal proper.* When deprived of both oxygen and phlogiston, that intermediate condition of the metal is produced, which most nearly approaches to the pure, uncombined, and simple element. These explanations may be seen on the chart of amended chemical nomenclature, published at New-York, by Messrs. Swords, in 1801.

We also observe that M. Delambre, perpetual Secretary of the French National Institute, has taken notice of this discussion. In his abstract of the proceedings of that learned body for 1809, he closes his remarks on the litigated points with these memorable words, (p. 8): "We do not permit ourselves to decide between the opinions of Mr. Davy and those of Messrs. Gay-Lussac and Thenard: but it is impossible to refrain from remarking, although it cannot, in any wise, be injurious to modern chemistry, that hydrogen, which frequently, according to the theory of Stahl, was nothing else than phlogiston, gives rise to combinations which have all the characters of metals."

This really seems like a surrender of the hypothesis about the simplicity of metals, &c. and owning that they owe their ductility, malleability, and lustre, to phlogiston. (See the plan, in 1797, for accommodating the disputes among the chemists concerning phlogiston, in a letter to Dr. Priestley, in our Hex. 1, Vol. I. p. 514.)

Sickness in the Army at New-Orleans, in 1809.

GREAT mortality was suffered by the detachment of the army encamped on the bank of the Mississippi, below

New-Orleans. The troops were ordered to a place about fifteen miles to the south-east of the city. The ground selected by the quarter-master was low and swampy. A spot was cleared in the forest for their reception. Frequently, after a shower of rain, the camp was wet and muddy. In the rear were puddles of stagnant water. A luxuriant crop of vegetables grew in these, and putrified in the course of the season. When the heats came on during the summer, the exhalations were rank and offensive.

Quartered on such damp ground, and breathing such a noxious atmosphere, the men soon became sickly. And this predisposition to disease was the more serious, inasmuch as the officers and soldiers came chiefly from more elevated and northerly climes, and had never been seasoned to southern service.

The situation of the army was the more calamitous, by reason of an omission to organize the medical staff, and to establish a regular hospital department. They who fell sick were not furnished with the usual accommodations. There were not even medicines in the camp to be dispensed to those who stood in need of them. Generally destitute of nurses, remedies, and attendance, the diseased recovered by strength of constitution or sunk under their complicated miseries.

But their condition was further aggravated. The beef and pork of their rations were remarked to be often in a corrupting and stinking state. Whether the salt had been too sparingly applied to them, or was of a weak and faulty quality, is not finally settled; but so it was, the meat was disgusting and unwholesome.

Fresh provisions were seldom afforded to the men; and the few that were issued were poor and scanty. There seemed to be no regular organization of the commissary's department.

As might have been predicted, the men became diseased, and died so rapidly, that orders were given to quit the station, and move the survivors to the higher country, near to Natchez. The prevailing forms of diseases in the camp were diarrhœas, dysenteries, remitting and intermitting fevers. In process of time, also, the scurvy mingled with the other maladies. This scorbutic diathesis manifested itself by swelled gums and loosened teeth. The soldiers, as surgeon Cutter declared to Dr. Mitchill, could frequent-

ly extract sound teeth from their gums with their fingers. Ulcers broke out in the mouth, tonsils and throat, of a most malignant character; and ate away all before them. The cheeks have been sometimes perforated quite through by this destructive ulceration; and even the large blood-vessels of the neck corroded so as to discharge their contents, and terminate life by sudden hæmorrhage.

In the House of Representatives an inquiry was instituted to investigate this miserable business; and Mr. Newton, from the committee appointed to inquire into the causes of the mortality which prevailed in the detachment of the army ordered for the defence of New-Orleans, made a long report, accompanied with various depositions and other papers. It concludes as follows:

"The committee, from a knowledge which they have acquired of the climate of New-Orleans and of the country surrounding it, and from the facts stated in the depositions, are of opinion that the mortality in the detachment ordered to New-Orleans is to be ascribed to the following causes:

"1. The detachment consisting of new levies.

"2. The insalubrity of the climate, the summer and autumn of 1809 being unusually sickly.

"3. To the nature of the ground on which the detachment was encamped at Terre aux Bœuf, and the detention of it at that place during the whole of the summer, contrary, as the committee conceive, to the instructions contained in the letter of the Secretary of War, bearing date the 30th of April, 1809.

"4. To the want of sound and wholesome provisions and of vegetables: the want of an hospital, and of hospital stores and medicines.

"5. The excessive fatigues to which the troops were subjected in clearing, ditching, and draining the ground on which they were encamped.

"6. To the want of repose during the night, owing to the troops not being provided with bars or nets, to protect them from the annoyance of musquitoes.

"7. The want of cleanliness in the camp, the nature of the position rendering it almost impracticable to preserve it.

"8. The sick and well being confined to the same tents, which neither protected them sufficiently from the heat of the sun, nor kept them dry from dews and rains."

Scudder's Museum of Natural History in New-York.

IT has been observed that there is a genius adapted to every thing. Mathematics, mechanics, chemistry, astronomy, and poetry, all have their votaries. So likewise natural history has inspired its devotees and zealots. Among these enthusiasts of nature, may be ranked John Scudder; a man who, by his own native impulse, has conceived an ardent desire of collecting, and who possesses uncommon skill in preserving, the materials of natural history.

Impelled by his taste for this captivating study, he has opened a Museum. It is no exaggeration to say that his animal preparations are unusually excellent. His white bear of Greenland, his royal tygress of Hindostan, and his collection of American squirrels, are superior to most specimens of quadrupeds that we meet with. His water-pelicans, gannets, oyster-crackers, loons, and owls, are mentioned as admirable samples of what he has accomplished in birds. His Atlantic porpoise evinces the skill he possesses in exhibiting the inhabitants of the ocean. The collection of insects, zoophytes, vermes, and serpents, is already considerable, and is increasing very fast. The shells promise fair to grow to an extensive mass of conchology, and the fossils are extending rapidly to a body of mineralogy.

This kind of information is particularly interesting to man. His relations to the external world are intimate and extensive. An acquaintance with natural history is but the knowledge of these relations. And a museum affords to the inquirer the matured fruits of travelling, without the fatigue, the time, the peril, or the expense.

Improvements in Albany.

IN Albany there are several institutions that well deserve to be mentioned. An instructive course of chemistry was delivered during the winter of 1809-10, by Dr. T. P. Jones. The experiments made by this gentleman were calculated to initiate the learner, by just and easy degrees, into the science; to give him a relish for this happy method of illustration; and to strike the senses by obvious displays

and exhibitions, while the understanding is addressed by reasoning and argument. It was highly interesting to behold upwards of sixty persons frequenting this class, and among the attendants a considerable number of the fair sex. Dr. Jones possesses promising talents as a lecturer.

An assortment of the mineral waters from the natural fountains at Saratoga and Ballston, is constantly kept by Mr. John Cook. They are put up in close vessels at their several sources, and transported to Albany, or to any other place, in perfect order. At Mr. C.'s elegant reading-room and circulating library in Court-Street, near the bank of Albany, these fashionable and medicinal liquids can be drunk in excellent style. By a careful manner of corking and bringing them, and by practical skill in broaching and dealing them out, this enterprising man affords them to his visitors nearly as good as they are at the fountain head. This is a luxurious regale to the well, and a remedial beverage to the sick. By the arrangements Mr. C. has made, fresh supplies are procured with great regularity. The public owe much to his laudable and spirited exertions.

The museum of Mr. Trowbridge deserves to be noticed. It is kept in the old Court-House, Court-Street. His assemblage of minerals, shells, and insects, are very good beginnings. And his various other curiosities of art and nature, while they are convincing proofs of what he has done, afford encouraging prospects of more. It is to be hoped he will continue his efforts, and that reward will accompany his labours.

In the fine arts, Mr. Ames, merits the highest eulogy for his gallery of paintings, which are worthy the attention of every sensible traveller.

Watts's Dissertation on the Disease of the Hip Joint.

IN June, 1809, Mr. John Watts, of New-York, published, at Edinburgh, his inaugural essay, "De Morbo Coxario;" which he defended on undergoing the public examination, which the statutes of the university require from candidates for the degree of doctor in physic. The reason

alleged for selecting this disorder of the hip for a thesis, is, that it was less trite and common than most other medical topics. As far as we can judge, it evinces industry and diligence, in collecting from Messrs. Ford, Falconer, Cooper, Bell, Hunter, Heberden, Crowther, and others, their respective sentiments. From these sources of information Dr. W. has made out a history of the disease, which he divides into first, second, and third stages. To this he has added an account of the appearances on dissection, a table of the ratio symptomatum, the method of distinguishing the morbus coxarius from all others, and a presage of the event in any given case. He then discourses of the treatment; and concludes by narratives of two cases which occurred in Guy's Hospital. As far as we discern, by hastily turning over the leaves of this Latin pamphlet, Dr. W. lays but little stress on *general* remedies, but depends chiefly upon *local* aids; such as leeches, scarifications, cupping-glasses, fomentations, blisters, caustics, plasters, dressings, and due regard to the prevention of ulceration, caries and anchylosis; so that, on the whole, the tract appears to be a sensible and well arranged summary of opinions and practice relative to this distressing and perplexing malady.

A new Periodical Publication.

IN the beginning of July, 1810, Mr. E. Sargeant, of New-York, laid before his fellow-citizens the first number of a periodical work, entitled, "The American Medical and Philosophical Register, or Annals of Medicine, Natural History, Agriculture, and the Arts." The matter is distributed under five heads, to wit, original communications, biography, review, domestic, and foreign intelligence. It will be continued once in three months, and be occasionally embellished with plates. The conductors are *a Society of Gentlemen.* We refer to their prospectus, which has, for some time, been circulated in print, for the detailed views and objects of the publication.

Termination of the Salivary Ducts externally, on the fore part of the neck.

A CASE of the termination of the ureters outwardly, was recorded in Hex. 2, vol. ii. p. 96. We now mention an instance of salivary ducts ending externally. A boy is now living, in the town of North-Hempstead, on the fore part of whose neck are two orifices, which discharge a mucous fluid, resembling saliva. They open near the middle of the sterno-mastoideus muscles, and seem to perforate the skin obliquely. When he eats, drinks, or exercises the muscles of his neck, a slimy secretion exudes. At other times, little or nothing escapes, and the excretory passages appear dry. As far as our opinion can be formed on this singular mal-conformation, it would clearly appear that these are two excretory ducts of the salivary glands, terminating on the fore part of the neck, instead of ending under the tongue in the usual way. And we record the lusus naturæ that it may be added to the other facts which make up the history of the human body.

Connecticut Academy of Arts and Sciences.

OFFICERS for the year—chosen in October, 1809.

President—Rev. Timothy Dwight, D. D.

First Vice-President—His Ex. John Treadwell, L. L. D.

Second V. President—Hon. David Humphreys, L. L. D.

Councillors—Hon. Chauncey Goodrich, Rev. James Dana, D. D. Rev. Abraham Jarvis, D. D. Rev. Bela Hubbard, D. D. Hon. John C. Smith.

Corresponding Secretaries—Enoch Perkins, Esq. Hon. David Daggett, Barzillai Slosson, Esq.

Recording Secretary—Mr. Jeremiah Day.

Treasurer—Stephen Twining, Esq.

Keeper of the Cabinet—Benjamin Silliman, Esq.

Committee of Publication—Rev. Timothy Dwight, D.D. Noah Webster, Esq. Benjamin Silliman, Esq.

Professor Kingsley is appointed first Orator, and Mr. Sereno E. Dwight, second Orator, for the next annual meeting.

The Orator for the day was Mr. Professor Day, who delivered an ingenious discourse before a respectable audience.

Feat of a Sword Fish.

THE following curious fact is related at Baltimore, on the certificate of James Badger, mate of the schooner Sarah, and published with his signature, 30th Oct. 1809.

"The schr. Sarah, Milner, of Kingston, (Jam.) was on her voyage from thence to this port, struck by a *sword-fish*, about 12 o'clock in the night, being out three days. The sword penetrated through solid timber thirteen inches thick, and protruding within the vessel upwards of seven inches, passed into a tierce of coffee. He stuck until seven o'clock, A. M. when he broke away, being severely wounded by strokes of the harpoon. The schooner being hove down yesterday, the sword was found and extricated."

Curious effect of lightning upon a lady's golden chain and the skin of her neck.

A REMARKABLE operation of the electric fluid is related in the "Journal des Dames et des Modes," for 20th June, 1809. On the 1st June, a house kept as a boarding-school for girls, at Bourdeaux, was struck by lightning; as was also one of the ladies. Being put to bed, she did not recover her voice for two hours after the accident, nor her recollection before the end of six hours. Nor had she the faintest remembrance of what had befallen her.

A chain of gold, which she wore around her neck, was melted and oxyded by the lightning. Her whole neck was covered with a black laced band. About her neck there are seven burns, resembling the marks produced by the application of a hot iron. Their surface was of a purple colour. A stripe passed in a zig-zag direction, from the left side of the bosom to the arm-pit of the same side, and there ended in a round spot equally purplish. On the left arm was found a similar stripe, extending below the bend of the arm where the part was covered by the clothing.

The purple hue resembled a skin coloured by a solution of gold, and could only be ascribed to the oxyd of that metal. The zig-zag stripes indicate the passage of the lightning, conducted by the gold, which was melted and oxyded in its passage. The round spot which terminates the stripe at the arm-pit, would seem to have been occasioned by a longer continuance of the gold, and of the fulminating agent upon that part.

Central Medical Society of New-York, February, 1810.

1. ELECTION.

AT the anniversary meeting of the Medical Society of the State of New-York, holden at the capitol in the city of Albany, the following members were elected officers:

Nicholas Romayne, President.
Alex. Sheldon, Vice-President.
Andrew Proudfit, Treasurer.
John Stearns, Secretary.

Censors.
- Westel Willoughby, jr.
- William M'Clelland,
- William Wilson,
- Abraham Allen,
- Joseph White,

Committee of Correspondence.
- Nicholas Romayne,
- Alex. Sheldon,
- Andrew Proudfit,
- John Stearns,
- Henry H. Sherwood,
- Oliver C. Comstock,
- John Spafford,
- Henry White,

2. ORATION.

The President delivered a learned and appropriate oration in the Senate Chamber, to the Society, to both Houses of the Legislature, and a concourse of other persons. He reviewed the laws in force touching the medical profession, and the institutions among us for medical tuition. He discussed the merits of the medical character,

and suggested various expedients for the good of the profession. Their "transactions for 1809," were laid, in the form of a printed pamphlet, on the tables of the members of the Senate and Assembly. To this is added "the Anniversary Address of the President" for that year.

Before the close of their session, the Society ordered a circular epistle to be forwarded to the County Societies.

3. *Resolve concerning militia exemptions. Medical Society of the State of New-York, 9th February,* 1810.

WHEREAS communications have been made to this Society, from several of the County Medical Societies, requesting the intercession of this institution to effect a repeal of that part of the militia law which compels physicians and surgeons to do military duty: Therefore, Resolved, That it is the sense of the Society that the section of the militia act imposing on practitioners of physic and surgery military duty, ought to be repealed, as inconsistent with the ancient rights and immunities of physicians and surgeons; and that a committee be appointed to wait on Dr. Mitchill, and such other members of the legislature as they deem proper, to request their friendly aid to effect the repeal of the aforesaid section of the militia law. Whereupon the President, Secretary, and Dr. Comstock, were appointed. Certified by me,

JOHN STEARNS, Sec'ry.

4. *Refusal of the Assembly to exempt Physicians.*

IN the Assembly, the bill reported by Mr. Van Rensellaer to amend the act to organize the militia, was debated in a committee of the whole House, on the 26th March. By the first section it was provided, that all presidents, professors, teachers and students, of colleges and academies, all schoolmasters engaged for at least one year, and a few other classes of persons, should be exempted from performing militia duty. The practitioners of medicine were continued under the regulation of the last session, compelling the officers to enrol them. Dr. Mitchill proposed to amend the section, by inserting the words "all lawful practisers of physic and surgery." The object of this amendment was to excuse the persons com-

ing under these descriptions from service as militia men. The mover explained and recommended it with a broad display of the reasons in its favour. The proposal, however, was opposed from almost all sides of the House; and, after a debate of some warmth and continuance, was decided in the negative. The sense of the House was expressed very strongly on the division, which was called for on the occasion. They who voted against the motion to exempt medical practisers were, Messrs. Bellinger, Bevier, Bishop, Bloom, Bronson, Brooks, Brother, Brouwer, Bulkley, Cady, Carman, Chandler, Chapin, Chapman, Clarke, Clift, Colvin, Conklin, Connor, Coryell, Crafts, Day, Depuy, Dorsey, Dubois, Fish, Gale, Graves, Greene, Haight, Hardenbergh, Hasbrouck, Hoit, Humaston, C. Kellogg, J. Kellogg, Kent, Knox, Lee, Leonard, Lewis, Manly, Markham, Moore, Morrell, Nicholson, Noyes, Odell, Ostrom, Osborn, Platt, Pond, Prall, A. Rose, Schuyler, Scudder, Speaker (North), Skinner, Storrs, Strong, Tooker, Van Antwerp, Van Beuren, R. Van Horne, Van Orden, Van Renssellaer, Van Vechten, Van Wyck, Wakley, Wheeler, Zielley—70. They who voted in favour of medical exemptions were only nine, to wit: Messrs. Comstock, Deforest, Finch, Hopkins, Ingold, Lusk, Mitchill, Mooney, J. Rose—9. By which it appears that the legislative opinion in favour of compelling such persons to perform the duty of militia men, is fixed, and not likely to be very soon altered or revoked.

William M'Alpin's Map of New-York.

THIS is De Witt's Map in miniature. The publisher has, however, rendered it useful by delineating the *new Counties*, that have been erected since the publication of Mr. D.'s grand State Map. He has also marked the courses of some of the *great turnpike, and other roads,* through the Eastern, Northern, and Western Counties, and thereby given to it additional interest and value. Both students in geography and travellers, will find this a convenient map; for its small size renders it portable, and its moderate price makes it convenient. It appears to have been published at Oxford, (N. Y.) during the summer of 1808.

Calculation of the Great Solar Eclipse of 1811.

DR. S. L. MITCHILL,

SIR—I take the liberty of sending you the result of a few leisure moments—a calculation of the great solar eclipse in 1811. Some accounts of that eclipse, which have been published, have assigned it to the 17th day of September. Should you give the following a place in the Medical Repository, it may assist the public in solving the question, whether the eclipse will occur on the 17th or the 16th day.

Calculated for New-Haven, N. L. 41° 19′, *W. L.* 73° 14′.

Sun's longitude, 5s. 23° 56′ 23″ 21‴

Apparent time of conjunction at New-Haven, in astronomical time, September 17th, 1h. 57′ 50″ 44‴; in common time, September 16th, 1h. 57′ 50″ 44‴ P. M.

Sun's distance from the nearest solstice, 2s. 23° 56′ 23″ 21‴

Moon's horizontal parallax, 54′ 0″ 23‴

Sun's declination North, 2° 24′ 33″ 58‴

Angle of the Moon's path with the ecliptic, 5° 43′ 46″

Moon's latitude, North ascending, 36′ 43″ 15‴

Moon's hourly motion from the sun, 27′ 11″ 49‴

Sun's semi-diameter, 15′ 58″ 47‴

Moon's semi-diameter, 14′ 44″ 33‴

Semi-diameter of the penumbra, 30′ 43″ 22‴

Eclipse, 16th of September, 1811.

Beginning, 20 minutes past 12 o'clock.

Greatest obscuration, 23 minutes past 2.

End, 6 minutes past 4.

Digits eclipsed, 10° 30′ on the south limb.

NOYES DARLING.

New-York, 14th May, 1810.

Pearson's experiments on Expectorated Matter.

IN June, 1809, a paper was read before the Royal Society of London, on the matters raised from the lungs by human beings. These Dr. Pearson arranges under seven heads: 1. The jelly-like semi-transparent kind, of a blueish

hue, excreted in the healthy state. 2. The thin mucilage-like transparent matter, so copiously expectorated in bronchial catarrhs. 3. The thick, opaque, straw-coloured, or white and very tenacious matter, coughed up in a great variety of bronchial and pulmonary affections; especially in that of tubercles. 4. Puriform matter secreted without any division of continuity or breach of surface of the bronchial membrane, very commonly occurring in pulmonary consumptions. 5. The matter which consists of opaque, viscid masses, together with transparent fluid, or the second sort above stated, with nodules of the third or fourth kind. 6. Pus from the vomicæ of tubercles: and 7. Pus from vomicæ by simple inflammation of the lungs, and without tubercles. From a variety of experiments made on the five former of these substances, by caloric, alcohol, water, vinegar, and other agents, Dr. Pearson concludes that the several sorts of expectorated matter, do not differ in the ingredients of their composition, but merely in the proportion of them to one another. He shows that they chiefly consist of *coagulable* or *albuminous* animal substance, instead of mucus, as heretofore believed; of which about one twelfth, or one tenth, may be called an animal oxyd; and a considerable proportion is evaporable water, impregnated with several saline and earthy bodies. Besides muriate of soda, he found potash, in these expectorated fluids: to wit, from half to three-fourths of a part per thousand of potash, while the common salt varied from one and a half to two and a half parts in a thousand; and the neutralized potash he also found in the blood, dropsy fluid, pus of abscesses, pus secreted without breach of surface, the serum effused from blisters, urine, and the slimy secretion from the nostrils in catarrhs. So that potash may now be ranked among the constituent parts of animal matter.

Account of an Albino; communicated in a letter to the Editors by Col. Gibbs.

PASSING through Warwarsing, Ulster County, a few days ago, I was informed that there was an Albino in the neighbourhood. Curiosity led me to send for him, and, as I believe no account has been published of this particular

case, I take a pleasure in forwarding to you a slight description of him for the Medical Repository.

SAM, a black man, born in the state of New-York, 61 years old, perceived, about three months ago, a small white spot on his breast, near the junction of the ribs. This increased gradually, running upwards, over his right shoulder and under the arm-pit, and now covers about a square foot of surface. The colour is like that of the whites, but there are a few small purple spots upon it. His breast is covered with hair of a white colour resembling wool, the alteration extending *farther on that substance.* The nails and ends of the fingers are somewhat changed, and a rapid progress of this phenomenon may be expected.

On particular inquiry of himself and his neighbours, I found that he had enjoyed good health for many years, though his appearance is rather emaciated, and that he has not been subject to any scrophulous complaint.

American Edition of Thomas's Modern Practice of Physic.

Messrs. **COLLINS & PERKINS** are now putting to press this valuable and popular work, including the large body of additions and improvements which are found in the latest London edition. The repeated call for new impressions of this system of Practice, and the unprecedented circulation of it through Great-Britain and its dependencies, afford sufficient evidence of the rank it holds in the opinion of the medical profession. The author has made much exertion to condense within his limits, a large mass of materials, generally drawn from the best sources, and improved by a display of modern discoveries and opinions.

To this American edition an Appendix will be added, by Dr. EDWARD MILLER; the principal object of which will be to oppose some erroneous impressions, which the author seems to have received, concerning the malignant epidemics of this country, and to present the results of American observation and experience on that subject.

Murray's Grammar in Two Volumes Octavo.

ALTHOUGH subjects of literature, in general, are not strictly embraced by our Journal, yet we cannot resist the inclination we feel to congratulate our country on the distinguished rank which one of her sons has acquired in this honorable field of labour. The British nation have had the candour to admit the distinguished excellence of the grammatical publications of our fellow-citizen, LINDLEY MURRAY, and have adopted them as the standard, in preference to the valuable grammar of Bishop Lowth, one of the most learned and classical scholars England has produced.

To inform the public that Murray's duodecimo grammar is generally adopted in our country, is to inform them of what is already well known. We have, therefore, only to state, that he has now exhibited, in two volumes octavo, a greatly improved edition of his grammatical works.—The new matter, which constitutes nearly one hundred pages, principally consists of ingenious and acute disquisitions, in support of what he considers as the established principles of language. The work is calculated for colleges and private libraries.

As we consider it among the indispensable duties of a learned physician to know *how* to write, as well as *what* to write, we cordially recommend to his attention this edition of Murray's grammar. It has just been handsomely reprinted in this city, at about one third the price of the London copy.

Journal of Mineralogy.

THE first number of the *American Mineralogical Journal*, by Professor Bruce, was published in the beginning of April, 1810, by Messrs. Collins & Perkins. The importance of the science cultivated by this gentleman, is generally acknowledged. Its value is, indeed, daily increasing. The fossil treasures of our country are become the subjects of keen and ardent search; and the circumstances of the

times impel the citizens to inquire into every thing appertaining to them, with a new and additional interest.

It is expected that there will be no lack of materials; and no doubt can be entertained that the editorial department will be ably conducted. The prospectus may be perused in our Hex. 3, Vol. I. p. 202.

Crawford's Translation of the "Fathers of Physic."

JOHN CRAWFORD, M. D. of Baltimore, proposes a translation of Baron Haller's Latin edition of the "Artis Medicæ Principes." A paragraph from his printed prospectus, will give an idea of this laudable and spirited design.

"The indefatigable and illustrious Haller has given a "new edition in Latin of Hippocrates, Aretæus, Alexan- "der, Aurelianus, Celsus and Rhazes, which is contained "in ten volumes octavo. It is designed to translate every "thing contained in these which can contribute to convey "any useful instruction; but, in doing this, a slavish re- "gard to the language of the author will be dispensed with; "important information will be alone regarded. Thus "the quantity of matter will be considerably reduced, and "the expence proportionably diminished. So modified, "the work would be, perhaps, more acceptable than the "original, even to those who possess, and are well ac- "quainted with its contents."

FOREIGN.

Nature of morbific exhalations ascertained by colouring matters.

M. Modeste Paroletti, has published a very long memoir in the *Journal de Physique*, for the month of March last, of which we can only give the outline. It goes to excite the attention of the learned, to discover the nature of morbific exhalations, by the employment of colouring matters, as chemical re-agents hitherto little known, in order to throw light upon certain diseases.

Having observed that the bright scarlet colour of the American seed *(abrus precatorius)* changed into an ebony black, in the space of an hour, when held between the hands of his child, and placed in the bed at the time he lay ill with a putrid fever, he instituted an inquiry into the cause of this phenomenon. He found that the whole of the inside of these seeds became blackened, and that their natural colour was in part restored by the nitric acid. He tried in vain to re-produce the same phenomenon with the same patient.

These red seeds, exposed to the exhalation of putrefying animal substances, acquired a shade of dark red. Carbonic acid gas gave them in a few days a deep tinge, like the colour of wine; plunged into a mixture of three parts of hydrogen gas, and two parts of azotic gas, they became of a blackish brown colour; but they took a very intense black colour, very nearly resembling that produced by the morbific virus, when they were immersed in a mixture of three parts of hydrogen, one of azote, and one of carbonic acid. Carburetted, sulphuretted, and phosphuretted hydrogen gas, appeared to him, when tried separately, to produce no action upon the red colour of the American seeds.

In reasoning upon these facts, M. Paroletti says, " It is probable that hydrogen, azote, and carbon, are among the number of constituent principles of morbific miasmata; it is natural to believe that the nitric acid, which acts in a

different way to what these three substances do, exerts a decomposing power upon them. This opinion is confirmed by theory, and by the success of the means of disinfection which we employ. The only conclusion that we ought at present to draw is, that it is of very great importance to extend our knowledge of azote and hydrogen." He adds, "I shall conclude with two observations which arise from these experiments, and which may show the utility of employing *colouring matters* as re-agents in chemical researches. We have only vague conjectures on the nature of different cutaneous secretions which take place in a great number of diseases. The chemical knowledge of these discharges will be of great service in medicine. The colouring matters offer themselves as useful instruments in this kind of discoveries. We only want an accurate account of the different changes of colour caused by the exhalations in a great many diseases, to institute a set of experiments, the result of which would be highly interesting." *Med. & Philos. Journal of London.*

Medical Society of Paris.

This learned body held its first meeting for the present session, (1809-10) on the 31st of October last.

After a short preliminary discourse by the president, M. Sedillot, the Secretary, in recapitulating the proceedings of the Society during the last year, gave a copious account of the perforation of the tympanum, as having been practised with success in several cases of deafness.

The following subject was then announced as a prize question to be decided in October, 1810.

"Describe the disease designated by the ancients, and particularly by the English medical writers, under the name of Angina Pectoris.

"Point out the causes which produce it, and the authors who speak of it in a particular manner; describe the diseases which resemble it most, the affections with which it is complicated, and those which it produces in its turn."

The prize is a gold medal, of the value of 300 Francs. Another gold medal, of the value of 500 Francs, to be awarded in Oct. 1811, has also been offered by the Society for the best paper on the following subject.

"A clear and precise idea is to be given of the nature of contagion. Point out the differences considered with regard to the nature of its principles, and the various modes of its communication. Designate from among the diseases generally considered as contagious, such as are really of that description. Lastly, Point out the mode in which the contagion is communicated in each of them."

An anonymous friend to humanity has presented 300 Francs to the Society to be also adjudged at its first meeting in October, 1811, to the author of the most satisfactory essay on the following subjects.

"1. Enquire, from direct observations, into the nature and effects of Plica Polonica; point out the epiphenomena, as well as any concomitant diseases which are foreign to it; describe the true causes of this affection of the hairy parts of men and animals since its origin, and in the different countries where it has been observed.

"2. Determine the circumstances under which these causes exert their influence; ascertain why the plica has at all times spared or afflicted certain classes, and why, on some occasions, it has been observed to prevail and to disappear alternately.

"3. Appreciate the value of the therapeutic and hygiene means hitherto proposed to combat, or prevent this species of endemic; and point out the best method of extirpating it." *Ibid.*

Austrian Prize Questions.

The Austrian government has lately proposed the following prize-questions, relative to substitutes for various foreign articles in the Materia Medica. 1. What indigenous or European productions, distinguished by specific effects, may be substituted for those now brought from India. 2. A substitute for camphor. 3. A substitute for Peruvian bark. 4. What species of plants may replace senna, jalap, and ipecacuanha? 5. A substitute for opium. The prize for each question is five hundred ducats.

Ibid.

Remedy for the Tape-worm.

Common spirits of turpentine have been recently administered by several medical gentlemen of London, with good effect, in the cure of tape-worm. The doses given were, in some cases, so large as two ounces; but those of half an ounce at a time, repeated twice a day, were generally found to answer the purpose. The vehicle in which the turpentine was administered, was generally honey. *Ibid.*

Mode of purifying Air in large Buildings.

Doctor Van Marum has discovered a very simple method, proved by repeated experiments, of preserving the air pure in large halls, theatres, hospitals, &c. The apparatus for this purpose is nothing but a common lamp, made according to Argand's construction, suspended from the roof of the hall, and kept burning under a funnel, the tube of which rises above the roof without, and it is furnished with a ventilator. For his first experiment, he filled his large laboratory with the smoke of shavings. A few minutes after he lighted his lamp, the whole of the smoke had disappeared, and the air was perfectly purified. *Ibid.*

☞ In our next will be given an account of ſome "*Pathological and Practical Remarks upon certain Morbid Affections of the Liver*," lately publiſhed by Profeſſor Ruſh.

A ſketch of Dr. Strong's "*Diſſertation on the Diſeaſe termed Petechial, or Spotted Fever*," (for a copy of which we are obliged to Dr. Cogſwell,) will likewiſe be given in our next number.